CITY OF CARDIFF.

ANNUAL REPORT

FOR 1913

OF THE

MEDICAL OFFICER OF HEALTH.

EDWARD WALFORD, M.D., D.P.H., F.R.MET.SOC.,

MEDICAL OFFICER OF HEALTH, CITY AND PORT OF CARDIFF;
SCHOOL MEDICAL OFFICER, CARDIFF EDUCATION AUTHORITY.

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CARDIFF:
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CITY OF CARDIFF.

HEALTH AND PORT SANITARY COMMITTEE.

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Deputy-Chairman:

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,,	W. JONES.	,,	H. C. PRICKETT.

CITY OF CARDIFF.

Medical Officer of Health's Department.

Medical Officer of Health :

EDWARD WALFORD, M.D., D.P.H.

Assistant Medical Officers of Health :

A. F. BERNARD SHAW, M.D., D.P.H.
EMILIE C. CREASER, M.B., Ch.B., D.P.H.

Inspector of Nuisances :

SAMUEL EVANS.*

Assistant Inspectors of Nuisances :

F. GLOVER* (Chief Assistant).
T. W. WARREN* (District).
J. W. HOLDEN* (District).
W. FISHER* (District).
J. STRANGE* (District).
W. JAMES*‖ (District).
J. T. W. ROWLES*‖ (District).
A. F. MALE* (Lodging Houses).
F. DAVEY (Lodging Houses).
G. M. McGREGOR*‖ (Meat, Other Foods, &c.)
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W. G. JONES* (Shops & Workshops).
A. E. RICHARDSON* (Shops & Workshops).
P. F. NOOTE* (Shops & Workshops).

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Assistant Inspectors of Meat :

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Infectious Disease Inspector :

GEO. THOMAS.*

Disinfectors :

W. THOMAS. W. WEBSTER.

Health Visitors :

LILLY HUNTLEY‡ BESSIE H. KING‡ WINIFRED JONES‡

Chief Clerk :

THOS. CHANT.*

Clerks :

W. H. ALDERMAN.
A. J. GLOVER.*
O. W. FUDGE.
A. E. BRAIN.
A. G. CLARKE.

* Cert. Royal San. Inst. ‡ Cert. Health Visitor and School Nurse Royal San. Inst.
‖ Cert. Meat Insp. Royal San. Inst.

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CITY OF CARDIFF.

City Hall,
Cardiff,
June, 1914.

TO THE RT. HON. THE LORD MAYOR, ALDERMEN, AND MEMBERS OF THE CITY COUNCIL OF CARDIFF.

My Lord Mayor and Gentlemen,

I have the honour to present to you my twenty-sixth annual report. This report deals with the health of the City of Cardiff, and with the administrative work carried out in the department of the Medical Officer of Health during the year 1913.

The following is an extract from the General Order of the Local Government Board, dated 13th December, 1910, relating to the annual reports of medical officers of health :—

He shall as soon as practicable after the thirty-first day of December in each year make an Annual Report to the Council, up to the end of December, on the sanitary circumstances, the sanitary administration, and the vital statistics of the district.

In addition to any other matters upon which he may consider it desirable to report, his Annual Report shall contain the information indicated in the following paragraphs; together with such further information as we may from time to time require :—

(*a*)—An account of any influences threatening the health of the district, the prevalence of infectious or epidemic diseases therein, and the measures taken for their prevention.

(*b*)—An account of all general and special inquiries made during the year.

(*c*)—An account of the work performed by the Inspector of Nuisances during the year, including the statement supplied in pursuance of Article XX. (16) of this Order.

(*d*)—A statement as to the conditions affecting the wholesomeness of the milk produced or sold in the district.

(*e*)—A statement as to the conditions affecting the wholesomeness of foods for human consumption, other than milk, produced or sold in the district.

(*f*)—A statement as to the sufficiency and quality of the water supply of the district and of its several parts, and in areas where the supply is from waterworks, information as to whether the supply is constant or intermittent.

(*g*)—A statement as to the pollution of rivers or streams in the district.

(*h*)—A statement as to the character and sufficiency of the arrangements for the drainage, sewerage and sewage disposal in all parts of the district.

(*i*)—A statement as to the privy, water-closet, and other closet accommodation in the district, including information as to the approximate number of each type of privy and closet.

(*j*)—A statement as to the character and efficiency of the arrangements for the removal of house-refuse, and the cleansing of earthclosets, privies, ashpits, and cesspools in the district.

(*k*)—A statement with regard to the housing accommodation of the district as required by Article V. of the Housing (Inspection of District) Regulations, 1910, and an account of any other action taken by the Council under the Housing, Town Planning, &c., Act, 1909, bearing on the public health.

(*l*)—A statement as to the vital statistics of the district, including a tabular statement, in such form as we may from time to time direct, of the sickness and mortality within the district.

(*m*)—Where the Medical Officer of Health is appointed by the Council of a County Borough, or by a Council having delegated powers under the Midwives Act, 1902, a statement as to the administration of that Act in the district.

Section 132 of the Factory and Workshop Act, 1901, requires that the Medical Officer of Health shall report specifically on the administration of this Act in workshops and workplaces, and that he shall send a copy of this report to the Secretary of State.

The report also includes a statement prepared by the Inspector of Nuisances, who is required by the Board's General Order, Article XX. (16), to furnish the Medical Officer of Health with a tabular statement containing the following particulars :—

(*a*) The number and nature of inspections made by him during the year.

(*b*) The number of notices served during the year, distinguishing statutory from informal notices.

(*c*) The result of the service of such notices.

PHYSICAL FEATURES OF DISTRICT.—The City of Cardiff comprises 6,373 acres of land and inland water, exclusive of foreshore and tidal water, and is situated upon impervious strata, consisting for the most part of new red marl ; resting upon this formation are the more superficial deposits of river gravel, more or less saturated with water. A gradual rise in the gravel takes place towards the north, so as to attain a level of nearly 40 feet above Ordnance Datum in Queen Street and the Newport Road, and 50 feet at Cathays, where resting on the red marl, it forms a deposit to a depth varying from 8 to 20 feet of good building land, upon which the greater part of the north-east side of the town is constructed. The part of the town situated on the west of the River Taff is, in the northern or Canton District, on an alluvial deposit of clay, sand, and gravel ; the southern or Grangetown ward being on the estuarine mud—a stiff blue clay of marine origin, which forms also the soil in the neighbourhood of the Docks and South Splott. This low-lying part of the town is now protected from the sea and tidal waters by banks, and has in many parts been raised by the deposit of made soil composed of ashes and house refuse collected by the public scavengers. The southern part of the town therefore consists of alluvial land at a very slight elevation above the ordinary sea level near the mouths of the Rivers Rhymney, Taff, and Ely.

The Rhymney and Ely Rivers, at the points at which they enter the Bristol Channel, form respectively the eastern and western limits of the City ; the Taff flowing in a southerly direction forms a natural division of the town into east and west, each having a separate drainage system.

The area of the City of Cardiff is distributed in Registration Sub-Districts as follows :—East Cardiff, 481 acres, Central Cardiff, 3,832 acres, and West Cardiff, 2,060 acres. The City is also divided into ten municipal wards containing the civil parishes of Canton, Roath, St. John, and St. Mary.

Cardiff is well provided with parks and open spaces, forming admirable recreation grounds and breathing spaces for the inhabitants of the crowded parts of the town. Those places, which belong to the public and are under the control of the Cardiff Corporation, comprise a total area of about 300 acres, as follows :—

	Acreage. Exclusive of Roads. Acres.	r.	p.
Roath Park	100	0	0
Victoria Park	19	2	36
Canton Park	12	0	0
Loudoun Square ...	1	1	36
Howard Gardens ...	1	0	36
Adamsdown Square ...	0	1	32
Plasturton Gardens ...	0	2	39
Despenser ,, ...	0	3	23
Clare ,, ...	0	0	36½
Moorland ,, ...	1	2	5½
Grangetown ,, ...	3	0	31

	Acreage. Exclusive of Roads. Acres.	r.	p.
Llanbleddian Gardens ...	0	0	37
Ruthin Gardens ...	0	0	28
Senghenydd Gardens (North and South) ...	0	1	19
Windsor Esplanade Gardens	0	1	18
Penylan Gardens ...	6	0	0
Waterloo Gardens ...	3	0	0
Splott Park	18	0	0
Llandaff Fields ...	70	3	2
Cathays Park	60	0	0
Allen's Bank Crescent Open Space	0	1	16

TOTAL ... 300 acres, 2 roods, 35 perches.

Sir David's Field (Thompson's Park) with an area of 8 acres, 3 roods, 19 perches, was presented to the Cardiff Corporation in the year 1912, by Mr. Charles Thompson.

Grangetown Recreation Ground, with an area of 9 acres, 2 roods, is rented by the Corporation.

In addition to the above-named parks and open spaces, the public has, through the generosity of the owner, access to the following parks :—

	Acres.	r.	p.
Sophia Gardens	43	0	25
Cardiff Arms Park	17	3	32

HOUSING OF THE WORKING CLASSES.—The Order of the Local Government Board, dated December 13th, 1910, relating to the duties of the Medical Officer of Health and to the information to be given in his annual report, provides that this report shall include—" A statement with regard to the housing accommodation of the district as required by Article V. of the Housing (Inspection of District) Regulations, 1910, and an account of any other action taken by the council under the Housing, Town Planning, etc., Act, 1909, bearing on the public health."

These regulations require that—" The Medical Officer of Health shall include in his annual report, information and particulars in tabular form in regard to the number of dwelling houses inspected under and for the purposes of Section 17 of the Act of 1909, the number of dwelling houses which on inspection were considered to be in a state so dangerous or injurious to health as to be unfit for human habitation, the number of representations made to the Local Authority with a view to the making of Closing Orders, the number of Closing Orders made, the number of dwelling houses, the defects in which were remedied without the making of Closing Orders, the number of dwelling houses which, after the making of Closing Orders, were put into a fit state for human habitation, and the general character of the defects found to exist. He shall also include any other information and particulars which he may consider desirable in regard to the work of inspection under the said Section."

It is the duty of the Local Authority under these regulations to provide for a thorough inspection to be carried out from time to time, according to the varying needs or circumstances of the dwelling houses or localities in the district. They are also to cause to be prepared from time to time by the Medical Officer of Health, or by an officer designated by them, but acting under his direction and supervision, a list or lists of dwelling-houses, the early inspection of which is in the opinion of the Medical Officer of Health desirable.

Under Section 17 (2) of the Act of 1909, it is the duty of the Medical Officer of Health to make official representation to the Local Authority of any dwelling-house which, in his opinion, is unfit for habitation, and if the dwelling-house appears to them to be in such a state as to be unfit, it is their duty to make a Closing Order.

The work of the inspection in connection with this Act has been carried out by the Chief Inspector of Nuisances, Mr. S. Evans, the officer appointed by the local authority for this purpose, who calls the attention of the Medical Officer of Health to any matters requiring his intervention. Altogether 2,250 dwelling houses were inspected under the provisions of this Act during the year 1913.

The inspection is carried out in accordance with the provisions of the regulations, and therefore includes among other matters the following, namely :—

1. The arrangements for preventing the contamination of the water supply.
2. Closet accommodation.
3. Drainage.
4. The condition of the dwelling-house in regard to light, the free circulation of air, dampness, and cleanliness.
5. The paving, drainage, and sanitary condition of any yard or outhouses belonging to or occupied with the dwelling house.
6. The arrangements for the deposit of refuse and ashes.
7 The existence of any room which would in pursuance of sub-section (7) of Section 17 of the Act of 1909 be a dwelling-house so dangerous or injurious to health as to be unfit for human habitation.
8. Any defects in other matters which may tend to render the dwelling-house dangerous or injurious to the health of an inhabitant.

Records of the inspections of the dwelling-houses made under and for the purpose of Section 17 of the Act contain information under a variety of headings, including the following :—

1. The situation of the dwelling-house, and its name or number.
2. The name of the officer who made the inspection.
3. The date when the dwelling-house was inspected.
4. The date of the last previous inspection and a reference to the record thereof.
5. The state of the dwelling-house in regard to each of the matters referred to in Article II. of the regulations.
6. Any action taken by the Medical Officer of Health, or other officer of the local authority, either independently or on the directions of the local authority.
7. The result of any action so taken.
8. Any further action which should be taken in respect of the dwelling-house.

The following tables relate in detail to the inspections, representations, and action taken under the Act.

TABLE I.

Statement regarding houses inspected under the Housing, Town Planning, etc. Act, 1909, during the year 1913 :—

Street.	Houses Inspected.	Notices re Defects Served.		Notices re Defects Complied with.		Houses with Rent exceeding £26 a year.	No Rent paid.	Tenants changed since December, 1909.
		Owners.	Occupiers.	Owners.	Occupiers.			
Aberystwith Street	49	6	...	5	...	3	...	29
Adeline Street	83	27	1	27	1	...	...	25
Alexander Street	23	16	1	15	1	1	4	12
Ann Street	25	6	1	4	1	...	1	8
Bradford Street	26	14	4	14	4	...	1	8
Bruce Street	25	13	...	13	...	...	...	6
Clive Place	9	9	2	9	2	...	...	8
Comet Street	46	34	...	34	...	...	2	16
Crichton Place	12	4	5	4	4	...	...	9
Diamond Street	70	22	...	22	...	1	3	18
Eclipse Street	45	21	...	17	...	...	4	9
Edmunds Buildings	10	6	1	5	1	...	...	2
Eisteddfod Street	40	8	7	8	7	...	...	14
Emerald Street	58	32	7	32	6	...	1	26
Evelyn Street	35	16	3	15	2	4	1	16
Forrest Street	10	3	2	3	2	1	1	4
Frederick Street	79	12	9	12	9	25	2	20
Gough Street	32	7	16	5	16	...	2	20
Gwenneth Street	25	11	...	11	...	1	3	7
Harvey Street	35	12	13	11	11	1	...	20
Havelock Street	45	9	15	8	14	3	1	17
Helen Street	67	20	3	20	3	...	...	21
Herbert Street	20	2	6	2	3	...	...	9
Hewell Street	72	51	31	51	30	3	1	26
Janet Street	73	18	3	15	3	...	1	33
Leckwith Place	15	13	1	4	...	1	...	12
Lewis Court	9	1	...	1	...	...	...	5
Lily Street	30	21	5	21	5	2	...	13
Loftus Street	43	23	8	23	8	...	...	22
Mack's Court	2	...	...	...	...	...	...	1
Marion Street	110	11	...	11	...	21	30	25
Mary Ann Street	41	6	12	6	12	5	1	12
Merthyr Street	54	47	3	37	2	3	...	22
Milford Street	60	26	...	15	...	3	3	32
Newport Street	27	17	3	13	3	...	1	11
Nora Street	74	21	10	21	10	...	3	24
Norman Street	16	14	...	14	...	...	...	6
North Road	63	15	15	14	12	5	3	26
North Clive Street	23	17	4	17	4	2	...	23
Ordell Street	9	1	...	1	...	1	...	4
Park Street	30	7	5	6	5	24	5	...
Picton Place	44	15	1	12	1	...	2	14
Plasnewydd Road	41	32	6	31	6	2	...	21
Pontcanna Place	23	17	1	17	1	1	...	13
Railway Terrace	20	4	1	4	1	1	...	6
Raven Street	16	3	7	3	7	...	...	9
Rookwood Street	17	2	4	...	4	...	...	3

TABLE I.—(continued).

Street.	Houses Inspected.	Notices *re* Defects Served.		Notices *re* Defects Complied with.		Houses with Rent exceeding £26 a year.	No Rent paid.	Tenants changed since December, 1909.
		Owners.	Occupiers.	Owners.	Occupiers.			
Rose Street	47	26	5	26	5	1	...	19
Ruby Street	54	36	16	36	16	...	...	18
Scott Street	57	11	15	10	14	...	1	33
Shakespeare Street	85	61	10	61	10	2	5	36
Springfield Place	52	33	10	30	9	...	...	19
Tintern Street	26	17	...	17	...	...	...	17
Topaz Street	61	20	1	20	...	...	2	25
Tynant Street	26	11	3	10	2	...	...	8
Vere Street	18	11	...	1	...	...	1	5
William Street	6	7	...	3	...	...	...	...
Woodville Road	35	29	4	29	4	1	...	14
Worcester Street	2	1	...	1	...	...	...	1
Totals ...	2250	955	280	877	261	118	85	882

The notices referred to in the foregoing table were served under the Public Health Acts.

Only those houses let after the passing of the Housing, Town Planning, etc., Act, in December, 1909, at a rent not exceeding £26 a year can be dealt with under Section 15 (3) of the Act, as regards their being kept in all respects reasonably fit for human habitation.

It will be seen from Table I. that of 1,235 notices served during the year 1913, 97 remained uncomplied with at the end of the year; of these, 78 were served upon owners, and 19 upon occupiers.

Of 174 notices which remained uncomplied with at the end of the year 1912, 153 were complied with during the year 1913—129 by owners, and 24 by occupiers.

Table II. shows that 63 Closing Orders have been made under the Housing, Town Planning, etc., Act, 1909, and that 51 Demolition Orders were made.

TABLE II.

Proceedings taken relating to houses considered to be unfit for human habitation under Section 17 of the Housing, Town Planning, etc. Act, 1909, to the end of the year 1913 :—

STREET	Representations by the Medical Officer of Health	Closing Orders made	Houses rendered fit for habitation after Closing Orders	Demolition Orders made	Houses rendered fit for habitation after Demolition Orders	Houses Demolished
Allen's Arch	3	3	...	3*	...	...
Angelina Street	1	1	...	1	1	...
Bute Lane	4	4†	...	...	...	...
Cairns Street	6	6	...	6	6	...
Canal Street	2	2	...	2	2	...
Court Road	1	1	1	...	...	...
Crown Court	6	2	...	2	...	2
Harris' Court	6	6	...	6	...	6
Little Frederick Street ...	1	1	...	1	1	...
Love Lane	2	2	...	2‡	...	...
Madras Street	1	1	1	...	...	...
Mary Ann Street (Cottages at rear of) Nora Street	2	2	...	...	...	...
	2	2	...	2	2	...
North Loudoun Place ...	1	1	...	1	...	1
Roland Street	2	2	2	...	...	...
Roland Street, Rear of ...	1	1	...	...	...	...
Saltmead Road	2	2	...	2	2	...
Stanley Street	17	17‖	...	14 ⁂	...	13
Williams Court (Canal Street)	4	2	...	4	...	4
Womanby Street... ...	5	5	...	5	...	5
TOTALS ...	69	63	4	51	14	31

* Local Authority decided not to enforce the Demolition Orders.

† Local Authority decided not to make Demolition Orders, provided the houses are not used for human habitation.

‡ Further action deferred pending a scheme proposed by the owner for improving the locality in which the houses are situated.

‖ In three instances the Local Authority decided not to make Demolition Orders, provided the houses are not used for human habitation.

⁂ In one instance the Local Authority decided not to enforce the Demolition Order.

TABLE III.

The following Table shows the number of habitable rooms in 4,871 houses in Cardiff, let at 10/- per week and under (inclusive), inspected during the years 1911, 1912 and 1913, and the rent paid for such houses :—

No. of Rooms.	Rent of House per week.																													Total No. of Houses
	2/9	3/-	3/3	3/6	3/9	4/-	4/3	4/6	4/9	5/-	5/3	5/6	5/9	6/-	6/3	6/6	6/9	7/-	7/3	7/6	7/9	8/-	8/3	8/6	8/9	9/-	9/3	9/6	9/9	10/-	
2	...	1	1	4	1	18	1	17	1	20	...	3	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	71
3	1	...	6	...	...	7	...	18	7	13	13	7	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	73
4	2	1	...	...	...	4	2	46	7	196	33	161	19	172	54	178	61	167	22	33	4	29	2	8	...	10	1	2	...	4	1,218
5	...	...	...	...	...	2	...	5	...	31	3	25	1	68	13	110	47	176	24	53	6	41	4	18	2	18	...	8	...	10	665
6	...	...	...	...	...	...	1	8	5	69	1	74	3	138	12	341	57	451	53	211	20	312	24	175	25	161	19	67	7	93	2,327
7	...	...	...	...	...	...	...	...	...	2	...	2	1	2	...	9	2	45	2	22	...	53	...	100	3	83	20	26	10	48	430
8	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	5	1	1	...	28	...	3	...	12	...	4	2	11	70
9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	8	...	1	...	2	13
10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	3
13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Total No. of Houses	3	2	7	4	1	31	4	94	20	331	50	272	24	386	79	640	167	844	102	320	30	466	30	304	30	292	40	108	20	170	4,871

Tables IV. and V. show the number of unfurnished rooms sub-let in 1,563 houses, let at rentals of 6/6 per week and under, and the number of furnished rooms sub-let in 104 houses and their weekly rentals.

In other words, out of 4,871 houses inspected, parts of 1,563 were sub-let unfurnished, and parts of 104 were sub-let furnished.

TABLE IV.

The following Table shows the number of habitable rooms in 1,696 tenements (parts of 1,563 houses included in Table I. which are sub-let unfurnished) and the weekly rent paid for such tenements :—

No. of Rooms	Rent of Tenement per Week.																			No. of Tenements
	1/–	1/3	1/6	1/9	2/–	2/3	2/6	2/9	3/–	3/3	3/6	3/9	4/–	4/3	4/6	4/9	5/–	5/6	6/–	6/6	
1	12	3	93	7	106	1	59	...	37	...	5	...	5	...	...	...	1	1	...	...	330
2	1	...	17	1	40	2	134	14	322	15	312	17	153	4	17	2	18	2	...	...	1071
3	...	...	...	...	4	1	10	1	27	9	56	15	83	5	30	...	10	...	2	...	253
4	...	...	...	...	1	...	3	...	2	1	4	...	8	1	4	1	7	1	...	1	34
5	...	...	...	...	...	...	1	...	...	1	1	...	2	1	1	...	...	...	...	...	7
6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
	13	3	110	8	151	4	207	15	388	26	378	32	251	11	52	3	37	4	2	1	1696

TABLE V.

The following Table shows the number of habitable rooms in 161 tenements (parts of 104 houses included in Table I., which are sub-let furnished) and the weekly rent paid for such tenements :—

No. of Rooms.	Rent of Tenement per Week.																No. of Tenements.
	2/–	2/6	3/–	3/3	3/6	4/–	4/6	4/9	5/–	5/3	5/6	6/–	6/3	6/6	7/–	8/–	9/–	
1	3	3	5	1	11	64	4	8	13	1	1	2	...	...	...	1	...	117
2	2	1	...	...	1	6	4	4	9	...	1	4	1	1	...	1	1	36
3	...	...	...	...	...	4	...	1	1	...	...	...	...	...	1	...	...	7
4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
No. of Tenements.	5	4	5	1	12	74	8	13	23	1	2	7	1	1	1	2	1	161

During the routine inspection of the district in 1912, 62 cases of overcrowding were reported, and in 1913, 83 cases were found.

By the term overcrowding is meant cases in which the number of persons living in a room exceeds two, and in which the air space is less than 300 cubic feet per person. Judged by this standard, Cardiff cannot be regarded as an overcrowded town, as according to the Census Report of 1911, the percentage of the population living more than two in a room is comparatively low.

The following table gives this proportion in several towns in England and Wales.

TABLE VI.

Percentage of population living more than two in a room :—

	PER CENT.		PER CENT.
CARDIFF	4·8	Halifax	12·0
Merthyr Tydfil	10·5	Bradford	9·3
Swansea	10·7	Middlesborough	13·4
Aberdare	5·9	Hull	8·2
Rhondda	5·6	Worcester	4·9
Newport	5·4	Dudley	15·0
York	6·6	Birmingham	10·1
Wakefield	12.1	Hastings	5·5
Dewsbury	16·6	Eastbourne	4·5
Barnsley	10·0	Brighton	6·7
Sheffield	8·4	Newcastle-on-Tyne	31·6
Rotherham	8·2		
Huddersfield	12·8	England and Wales	9·1
Leeds	11·0	County Boroughs	9·4

Table VII. shows the number of houses and shops for which plans have been passed since 1881, and Table VIII. shows the density of population in the district.

TABLE VII.

Number of houses and shops for which plans have been passed since 1881 :—

PERIOD		PERIOD	
August, 1881, to August, 1892 ...	10,973	Year ended 31st August, 1903 ...	398
Year ended 31st August, 1893 ...	1,456	,, ,, ,, 1904 ...	228
,, ,, ,, 1894 ...	1,206	,, ,, ,, 1905 ...	389
,, ,, ,, 1895 ...	1,507	,, ,, ,, 1906 ...	291
,, ,, ,, 1896 ...	1,196	,, ,, ,, 1907 ...	222
,, ,, ,, 1897 ...	1,247	,, ,, ,, 1908 ...	307
,, ,, ,, 1898 ...	1,258	,, ,, ,, 1909 ...	377
,, ,, ,, 1899 ...	624	,, ,, ,, 1910 ...	307
,, ,, ,, 1900 ...	267	,, ,, ,, 1911 ...	208
,, ,, ,, 1901 ...	230	,, ,, ,, 1912 ...	325
,, ,, ,, 1902 ...	185	,, ,, ,, 1913 ...	325
Total	23,526		

TABLE VIII.

Density of population during the past ten years :—

Year	Persons per acre*
1904	26·6
1905	26·9
1906	27·2
1907	27·5
1908	27·8
1909	28·1
1910	28·4
1911	28·6
1912	28·9
1913	29·2

* Calculated on the basis of estimates of the population, and on an area of 6,373 acres.

The most dense part of the City is in the central or older district. Probably the area having the largest number of houses per acre is that surrounded by Bute Street, Bute Terrace, Mary Ann Street, and Millicent Street ; this area includes 6·3 acres, and contains 206 houses, or 32·7 houses per acre.

Table I. gives the rentals of 4,871 houses inspected under the Housing, &c., Regulations made under the Act of 1909. From this it would appear that 25·2 per cent. of the houses inspected were let at rentals of 6/– per week and under.

As this inspection does not include all the small houses in the City, it is probable that the proportion of houses at these low rentals is much lower, and it is believed that about 7·5 per cent. of the workmen's dwellings in the town are let at 6/– per week and under, 18·2 per cent. at 6/– to 7/6 per week, about 21·7 per cent. at 7/6 to 9/–, and 24·5 per cent. at 10/6 to 13/– per week.

There is a shortage of small houses suitable for separate families of the working classes, let at rents which they can afford to pay, and the provision of such houses by the Corporation under Part III. of the Housing Act, 1890, would meet a want which is felt in this direction. Many houses in Cardiff are let at higher rents than can be afforded by working men, with the result that these houses, which are constructed to accommodate one family, are frequently occupied by two or more families, and cases of overcrowding occur from time to time.

It should be mentioned that although the percentage of the whole population in Cardiff living in an overcrowded condition is comparatively low (4·8 per cent. living more than two in a room), the number of tenements with more than two occupants per room, and upon this basis overcrowded, according to the Census of 1911, amounted to 1,126.

The advantage of the provision of houses for the working classes by the Corporation depends largely upon the nature of the control which they would exercise over the dwellings and their tenants by bye-laws and regulations, by the limitation of the number of occupiers, and by the maintenance of a high standard of living and sanitation.

On 10th December last the Local Government Board held a local inquiry at Cardiff into the application of the Corporation for sanction to borrow the sum of £5,676 for the purpose of thirty workmen's dwelling houses in Kitchener Road and street works in connection therewith under Part III. of the Housing of the Working Classes Act, 1890. Sanction was subsequently given, and the houses are now being erected.

TABLE IX.

The following Table gives the number of houses in each Municipal Ward in Cardiff, as shown by the enumeration made in June, 1913, by the Inspectors in the Department of the Medical Officer of Health :—

Municipal Wards.	Dwelling houses, including Business Premises.				Lock-up Shops		Houses being Built.	Totals.
	Inhabited.	Occupied for Business Purposes only.	Vacant Houses. Number	Vacant Houses. Per Cent.	Occupied	Vacant.		
Central	1,784	391	67	2·9	290	14	6	2,552
South	1,615	200	49	2·6	20	1	1	1,886
Cathays	4,150	18	22	0·5	16	4	34	4,244
Adamsdown ...	1,983	37	18	0·8	9	...	...	2,047
Riverside ...	3,126	53	52	1·6	30	6	2	3,269
Canton	4,624	29	68	1·4	11	1	21	4,754
Grangetown ...	3,577	26	32	0·9	4	2	22	3,663
Roath	3,593	29	51	1·3	14	2	41	3,730
Park	4,695	65	41	0·8	29	2	11	4,843
Splott	3,017	30	15	0·4	3	1	...	3,066
TOTALS ...	32,164	878	415	1·2	426	33	138	34,054

WATER SUPPLY.—I am indebted to Mr. C. H. Priestley, M.Inst., C.E., the City Waterworks Engineer, for the following information, relating to the water supply of the district.

The water supply to the City, and to areas beyond the City boundaries, as provided by Act of Parliament, is a pure, soft water, derived from the gathering grounds on the old red sandstone formation, to the north of the South Wales coalfield, about 35 miles from Cardiff, in the Taff Fawr Valley, Breconshire. The water is conveyed by gravitation from the storage reservoirs at Taff Fawr to the reservoirs at Llanishen and Lisvane, balancing reservoirs being placed at suitable situations along the line of the main conduit, with filter beds of sand, etc. at Rhubina and the Heath. At the latter place Candy's Polarite Filters are also in operation. The capacity of the storage reservoirs is as follows :—

Beacons Storage Reservoir	...	...	345,000,000	gallons.
Cantreff ,, ,,	...	...	323,000,000	,,
Llanishen ,, ,,	...	...	317,000,000	,,
Lisvane ,, ,,	...	...	80,000,000	,,

The high level service is supplied from Rhubina, at which place the works comprise filter beds and storage reservoirs, supplemented by a service reservoir and water tower at Penylan, supplied with water by gravitation from Rhubina.

The average annual rainfall at the Beacons Reservoir (elevation 1,340 feet) for the past 29 years was 77·75 inches, the total during 1913 being 82·93 inches.

The Cardiff Corporation obtained further powers to acquire land for an additional reservoir (No. 3 or "Llwynon") at Taff Fawr to meet the requirements of the increasing population. The construction of this reservoir was commenced in November, 1910, and it is anticipated that it will be completed in 1916.

The drainage area in connection with the new reservoir is 6,400 acres in extent, in addition to 4,000 acres already in use, and the total storage of water in the reservoirs will amount to 2,265,000,000 gallons, including 1,200,000,000 gallons, the capacity of the new reservoir, which will be sufficient for a population of considerably over 300,000 persons, allowing for a full and unrestricted use.

The water is of excellent quality, as will be seen from the following reports:—

CHEMICAL ANALYSIS OF SAMPLES OF CARDIFF WATER.

(All results are stated in parts per 100,000).

Sample	Reaction	Hardness	Chlorine	Ammonia		Nitrates	Oxygen Absorbed, 4 hours, 80° F.
				Free	Albuminoid		
Heath Filter	Faintly Alkaline	3·1°	0·75	·0006	·0040	Practically Nil.	·031
Rhubina Filter	Faintly Alkaline	3·2°	0·75	·0008	·0032	Practically Nil.	·063
Llanishen Reservoir	Neutral	2·6°	0·7	·0010	·0086	Practically Nil.	·130
Lisvane Reservoir	Neutral	2·7°	0·7	·0008	·0078	Practically Nil.	·116
Cantreff Reservoir	Neutral	2·4°	0·7	·0010	·0056	Practically Nil.	·112
Beacons Reservoir	Neutral	2·3°	0·7	·0010	·0062	Practically Nil.	·109

BACTERIOLOGICAL EXAMINATION OF SAMPLES OF CARDIFF WATER.

Sample	Total Organisms per c.c. growing at 37°C	Relative Abundance of B. Coli
Heath Filter	...	No B. Coli in 50 c.c.
Rhubina Filter	6	No B. Coli in 50 c.c.
Llanishen Reservoir	28	Atypical B. Coli in 50 c.c.
Lisvane Reservoir	160	Typical B. Coli in 10 and 50 c.c.
Cantreff Reservoir	14	Typical B. Coli in 50 c.c.
Beacons Reservoir	4	Typical B. Coli in 10 and 50 c.c.

VITAL STATISTICS.—The statistics in this report are based upon the Registrar General's estimate of the population of Cardiff for the middle of the year 1913, *i.e.*, 186,554. The population of the City enumerated at the Census of April, 1911, amounted to 182,259, being an increase of 17,926 over the census of 1901 (164,333). The increase in the population of the whole City during the ten years ended 31st March, 1911, was at the rate of 10·9 per cent. The excess of births over deaths during this period was 25,031. The number of births amounted to 50,853, and the deaths to 25,822, but the actual increase in the population according to the census returns was 17,926, or a difference of 7,105. This would imply a considerable migration of population from the City to the adjoining districts during the period in question. It will be seen on reference to Table X. that in the South and Adamsdown Wards there has been an actual decrease in the population, and that in the Central Ward the population has remained practically stationary.

Table XI. shows the decennial increase in the populations in suburban districts immediately adjoining Cardiff, in which a very substantial rate of increase is shewn, varying from 28·5 per cent. in Lisvane to 86·6 per cent. in Whitchurch.

TABLE X.

Decennial increase or decrease of population in each Municipal Ward in Cardiff :—

MUNICIPAL WARDS.	Increase (+) or Decrease (—) of population.		Increase (+) or Decrease (—) per cent.	
	Between 1891–1901	Between 1901–1911	Between 1891–1901	Between 1901–1911
Central	— 1,062	+ 47	— 8·6	+ 0·4
South	— 399	— 201	— 3·7	— 1·9
Cathays	+ 3,999	+ 3,545	+ 27·5	+ 19·1
Adamsdown	— 2,046	— 201	— 12·6	— 1·4
Riverside	+ 2,224	+ 2,824	+ 14·9	+ 16·4
Canton	+ 6,561	+ 2,343	+ 49·8	+ 11·8
Grangetown	+ 8,850	+ 2,552	+ 75·4	+ 12·3
Roath	+ 2,405	+ 3,368	+ 19·7	+ 23·0
Park	+ 6,835	+ 2,158	+ 47·7	+ 10·2
Splott	+ 8,051	+ 1,491	+ 91·4	+ 8·8
Totals	+ 35,418	+ 17,926	+ 27·4	+ 10·9

TABLE XI.

Decennial increase or decrease of population in adjoining districts :—

PARISHES.	Increase (+) or Decrease (—) of population.		Increase (+) or Decrease (—) per cent.	
	Between 1891–1901	Between 1901–1911	Between 1891–1901	Between 1901–1911
Lisvane	+ 8	+ 73	+ 3·2	+ 28·5
Llandaff	+ 1,398	+ 3,365	+ 31·9	+ 58·2
Llanishen	+ 521	+ 521	+ 75·4	+ 42·9
Whitchurch	+ 1,543	+ 4,214	+ 46·4	+ 86·6
Totals	+ 3,470	+ 8,173	+ 38·8	+ 67·4

TABLE XII.

Area in acres of, and average number of persons per acre in, each Municipal Ward in Cardiff :—

MUNICIPAL WARDS.	AREA IN ACRES.*	PERSONS PER ACRE.†
Central	457	24·8
South	163	62·0
Cathays	382	57·7
Adamsdown	172	81·3
Riverside	298	66·9
Canton	448	49·2
Grangetown	1,143	20·2
Roath	750	23·9
Park	539	43·2
Splott	818	22·4
Cardiff ...	5,170	35·2

* Excluding inland water, docks and foreshore.

† Calculated on the basis of the population according to the Census, 1911.

The following table gives the population of Cardiff according to the census returns since 1801. The increase shown between 1871 and 1881 was in part due to the extension of the boundaries of the Borough, by the inclusion of the districts of Roath and Canton, in the year 1875.

TABLE XIII.

Year.	Census Population.
1801	1,870
1811	2,457
1821	3,521
1831	6,187
1841	10,077
1851	18,351
1861	32,954
1871	39,536
1881	82,761
1891	128,915
1901	164,333
1911	182,259

TABLE XIV.

The following table gives the population of Cardiff at various ages, estimated to the middle of the year 1913 :—

AGES.	PERSONS.	MALES.	FEMALES.
All ages	186,554	91,842	94,712
Under 5 years ...	20,592	10,297	10,295
5–10 years	20,163	10,010	10,153
10–15 ,, ...	18,929	9,178	9,751
15–20 ,, ...	18,236	8,770	9,466
20–25 ,, ...	17,568	8,353	9,215
25–30 ,, ...	16,428	7,995	8,433
30–35 ,, ...	14,735	7,256	7,479
35–40 ,, ...	13,127	6,593	6,534
40–45 ,, ...	11,538	5,801	5,737
45–50 ,, ...	10,071	5,177	4,894
50–55 ,, ...	7,952	4,079	3,873
55–60 ,, ...	5,791	2,940	2,851
60–65 ,, ...	4,300	2,174	2,126
65–70 ,, ...	3,255	1,575	1,680
70–75 ,, ...	2,101	919	1,182
75–80 ,, ...	1,117	480	637
80 years and upwards ...	651	245	406

The following is a Summary of the Vital Statistics for the year 1913 :—

Estimated Population ... 186,554

Births	4,900	Birth-rate per 1,000	26·2
Deaths	2,567	Death-rate per 1,000	13·7
Deaths under 1 year	566	Deaths under 1 year per 1,000 births ...	115

TABLE XV.

Table showing the number of deaths and death-rates per 1,000 from Zymotic, Respiratory and Tuberculous Diseases during the year 1913, compared with the average annual death-rates from these diseases during the preceding ten years (1903–1912) :—

Cause of Death.	Number of Deaths.	Death-rate per 1,000	Death-rate per 1,000, 1903–1912 (average).
Measles	11	0·05	0·35
Scarlet Fever	17	0·09	0·08
Diphtheria	41	0·22	0·14
Enteric Fever	6	0·03	0·05
Whooping Cough	17	0·09	0·27
Respiratory Diseases	388	2·08	2·44
Pulmonary Tuberculosis	233	1·24	1·27
Other Tuberculous Diseases	69	0·37	0·50

TABLE XVI.

Deaths and death-rate per 1,000 births from Diarrhœa and Enteritis (under 2 years) :—

	Number of Deaths.	Death-rate per 1,000 births.	Death-rate per 1,000 births, 1903–1912 (average).
Diarrhœa and Enteritis (under 2 years) ...	150	30·6	24·7

TABLE XVII.

Table showing the birth-rate and death-rate per 1,000 persons living, and rate of infant mortality in 1913, compared with the rates in 1912, the average rates for the ten years 1903-1912 in Cardiff, and the rates during the year 1913 in England and Wales and the 96 great towns :—

	Period.	Birth-rate.	Death-rate.	Deaths under one year per 1,000 births.
Cardiff	1913	26·2	13·7	115
Cardiff	1912	24·9	13·9	110
Cardiff	1903-1912	28·2	14·5	123
England and Wales ...	1913	23·9	13·7	109
96 Great Towns	1913	25·1	14·3	116

MARRIAGES.—The return of the number of marriages in the City of Cardiff during the years 1904–1913, with the rate of persons married per 1,000 of the population, is given below :—

TABLE XVIII.

YEAR.	MARRIAGES.	RATE OF PERSONS MARRIED PER 1,000 LIVING.
1904	1,563	17·7
1905	1,650	18·8
1906	1,769	19·2
1907	1,743	18·5
1908	1,759	18·3
1909	1,803	18·4
1910	1,728	17·3
1911	1,646	18·0
1912	1,938	20·9
1913	1,976	21·1

BIRTHS.—During the year 1913 the births registered in the City numbered 4,900 ; of these, 2,475 were males and 2,425 were females. The number of births corresponded to an annual birth-rate of 26·2 per 1,000 persons living. During the ten years ended 1891, the birth-rate in Cardiff averaged 39·9 per 1,000, as compared with 28·2, the average rate during the years 1903–1912.

The following table gives the annual number of births and the birth-rates in Cardiff in periods since 1852, from which it will be seen that a considerable decline in this rate has taken place during recent years.

TABLE XIX.

Period.	Number of Births.		Birth-rate per 1,000.	
1852–1861	1,144		44·2	
1862–1871	1,364	Averages	37·7	Averages
1872–1881	2,433		36·5	
1882–1891	4,166		39·9	
1892–1901	5,241		35·3	
1902–1911	5,049		28·9	
1912	4,597		24·9	
1913	4,900		26·2	

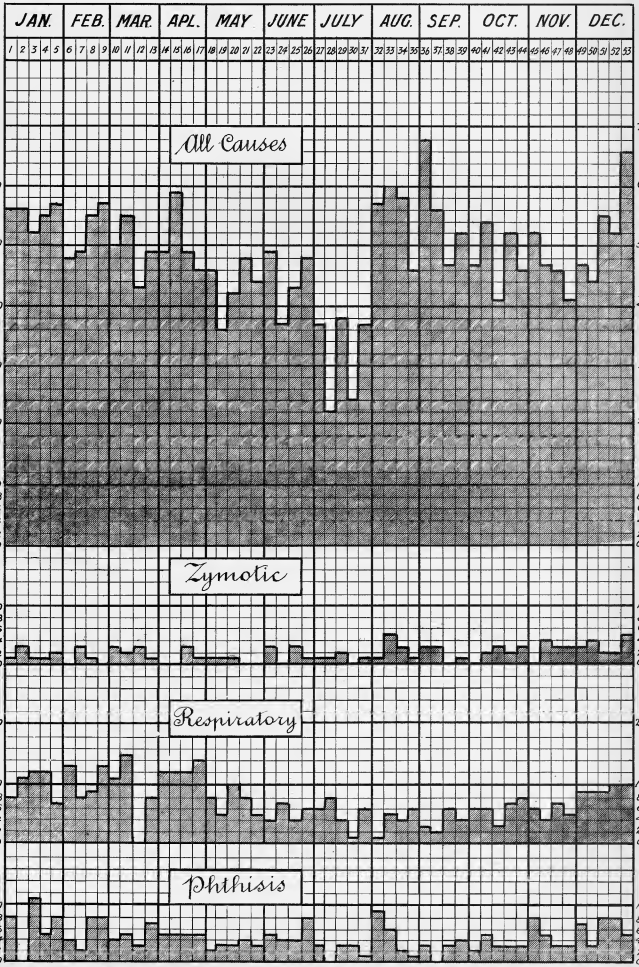
TABLE XX.

Showing the number of legitimate and illegitimate births, male and female, in each municipal ward during the year 1913 :—

Municipal Wards.	Legitimate		Illegitimate.		Totals.		TOTALS.
	Males.	Females.	Males.	Females.	Males.	Females.	
Central	117	111	11	10	128	121	249
South	129	132	5	5	134	137	271
Cathays ...	306	291	12	11	318	302	620
Adamsdown ...	168	157	12	12	180	169	349
Riverside ...	179	154	17	11	196	165	361
Canton	322	322	13	12	335	334	669
Grangetown ...	407	375	9	5	416	380	796
Roath	226	230	14	11	240	241	481
Park	236	255	8	10	244	265	509
Splott	278	308	6	3	284	311	595
Totals ...	2,368	2,335	107	90	2,475	2,425	4,900

Diagram A.

SHOWING THE NUMBER OF DEATHS FROM ALL CAUSES, ZYMOTIC DISEASES (SMALL-POX, ENTERIC FEVER. SCARLET FEVER, DIPHTHERIA, WHOOPING COUGH, AND MEASLES), RESPIRATORY DISEASES AND PHTHSIS IN CARDIFF DURING EACH WEEK OF THE YEAR 1913.



DEATHS.—The total number of deaths registered at all ages and from all causes in the City of Cardiff during the year 1913 amounted to 2,618, including non-residents who died within the district. This number corresponded to an annual death-rate of 14·0 per 1,000 persons living. If corrected by the substraction of non-residents who died in public institutions in Cardiff, and by the addition of residents who died in institutions outside the City, the number is reduced to 2,567, and the death-rate to 13·7 per 1,000.

From Table XXI. it will be seen that a continuous decline in the death-rate has taken place since these rates were first recorded in 1852–1861, when the mean rate for the ten years reached 29·2 per 1,000. The rate for the year 1913 (13·7) was, with the exception of that in 1910 (13·0), the lowest on record.

The death-rate throughout the country as compared with that of Cardiff for the year 1913 is given below :

	Death-rate per 1,000 persons living.
England and Wales	13·7
96 Great Towns	14·3
145 Smaller Towns	12·8
England and Wales, less 241 towns	13·1
CARDIFF	13·7

TABLE XXI.

The following table gives the vital statistics in periods since 1852, and shows the marked decline in the general death-rate, in the death-rate from zymotic diseases, and in the birth-rate in successive periods :—

Years	Population	Births	Birth-rate per 1,000	Deaths	Death-rate per 1,000	Deaths from Zymotic Diseases	Zymotic Death-rate per 1,000
1852—1861 ...	25,889	1,144	44·2	756	29·2	222	8·58
1862—1871 ...	36,152	1,364	37·7	875	24·2	167	4·62
1872—1881 ...	66,639	2,433	36·5	1,335	20·0	218	3·27
1882—1891 ...	104,420	4,166	39·9	2,255	21·6	347	3·32
1892—1901 ...	148,606	5,241	35·3	2,674	18·0	355	2·39
1902—1911 ...	174,490	5,049	28·9	2,597	14·8	286	1·63
1912	184,633	4,597	24·9	2,563	13·9	362	1·96
1913	186,554	4,900	26·2	2,567	13·7	258	1·38

Means. Means. Means. Means. Means. Means. Means.

TABLE XXII.

Showing the number of deaths and death-rates at various age periods during the last six years :—

Ages.	Number of Deaths.						Death-rate per 1,000 persons living at each age group.					
	1908	1909	1910	1911	1912	1913	1908	1909	1910	1911	1912	1913
Under 5 years	838	720	741	837	851	761	34·7	29·2	29·5	36·3	36·9	36·9
5 to 15 ,,	111	92	102	104	100	104	2·6	2·1	2·3	2·6	2·5	2·6
15 ,, 25 ,,	127	135	128	105	127	134	3·3	3·4	3·2	2·9	3·5	3·7
25 ,, 65 ,,	962	1,014	883	947	946	969	11·7	12·1	10·3	12·1	12·0	11·5
65 years and upwards ...	500	588	502	601	539	599	88·5	102·1	85·4	111·4	99·9	84·2
At all ages ...	2,538	2,549	2,356	2,594	2,563	2,567	14·3	14·2	13·0	14·1	13·9	13·7

TABLE XXIII.

Death-rates from all causes per 1,000 persons living in the several municipal wards, the highest rate in each year being underlined :—

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Cardiff (Whole District) ...	15·8	14·2	15·0	16·0	14·3	14·2	13·0	14·1	13·9	13·7
Roath Ward	13·3	11·4	12·3	11·9	10·7	11·3	11·9	13·0	12·8	9·5
Park Ward	9·3	8·8	8·9	9·9	8·9	8·9	9·3	12·4	11·9	10·8
Splott ,, ...	15·0	12·5	13·9	13·7	13·2	10·7	12·9	12·9	14·0	14·2
Central ,, ...	14·2	14·0	14·4	15·2	12·8	13·0	20·4	22·1	21·0	19·4
South ,, ...	15·2	13·0	16·4	17·1	15·4	14·3	18·3	21·4	19·1	21·2
Cathays ,, ...	11·1	10·1	11·2	11·1	10·0	9·3	10·5	12·3	12·6	13·3
Adamsdown Ward ...	15·5	17·6	17·2	20·3	15·7	17·2	14·9	16·3	16·3	16·6
Riverside ,, ...	11·3	9·4	9·2	10·1	10·7	10·8	13·6	12·6	10·6	12·1
Canton ,, ...	12·0	9·8	9·9	10·4	10·3	10·0	10·7	12·7	12·9	12·0
Grangetown ,, ...	15·2	14·3	14·4	17·0	14·0	14·0	14·0	14·2	15·6	15·3

TABLE XXIV.

The following table gives the crude death-rates per 1,000 in several large towns in England and Wales during the years 1906—10, 1911, 1912 and 1913.

Towns.	Death-rate per 1,000.			
	1906–1910	1911	1912	1913
London	14·9	15·0	13·6	14·3
West Ham	15·5	15·8	14·1	14·7
Croydon	12·1	11·8	10·6	11·7
Brighton	14·8	13·8	12·7	13·7
Portsmouth	14·1	14·1	12·9	12·4
Plymouth	16·3	17·2	14·9	15·8
Bristol	13·9	15·1	13·3	12·8
Swansea	16·5	16·2	13·3	14·5
Wolverhampton	15·8	15·8	13·4	15·9
Birmingham	16·6	16·8	14·1	14·9
Norwich	15·0	14·1	12·7	14·1
Leicester	13·8	13·3	13·4	13·5
Nottingham	16·2	16·1	14·4	14·3
Derby	13·9	14·3	12·1	12·7
Birkenhead	15·4	15·6	14·3	14·6
Liverpool	19·6	20·0	18·1	18·2
Bolton	15·9	15·9	13·4	15·9
Manchester	18·1	17·0	16·0	15·8
Salford	18·2	16·7	16·5	15·2
Oldham	18·6	17·6	16·1	17·1
Burnley	17·7	18·0	14·7	16·7
Blackburn	16·3	16·1	14·2	15·8
Preston	17·9	16·9	16·6	17·2
Halifax	15·2	15·2	14·7	15·6
Bradford	15·3	14·9	14·4	15·1
Leeds	16·0	16·4	14·2	15·6
Sheffield	16·3	16·1	14·2	15·9
Gateshead	16·1	16·1	15·4	14·6
Newcastle-on-Tyne	16·5	16·1	14·2	15·2
Huddersfield	15·3	15·0	13·6	14·7
Hull	16·1	16·7	14·4	15·0
Sunderland	18·6	17·9	15·9	18·0
CARDIFF	14·4	14·1	13·9	13·7

Diagram B.

BIRTH-RATE AND DEATH-RATE PER 1,000 IN CARDIFF, 1875–1913.

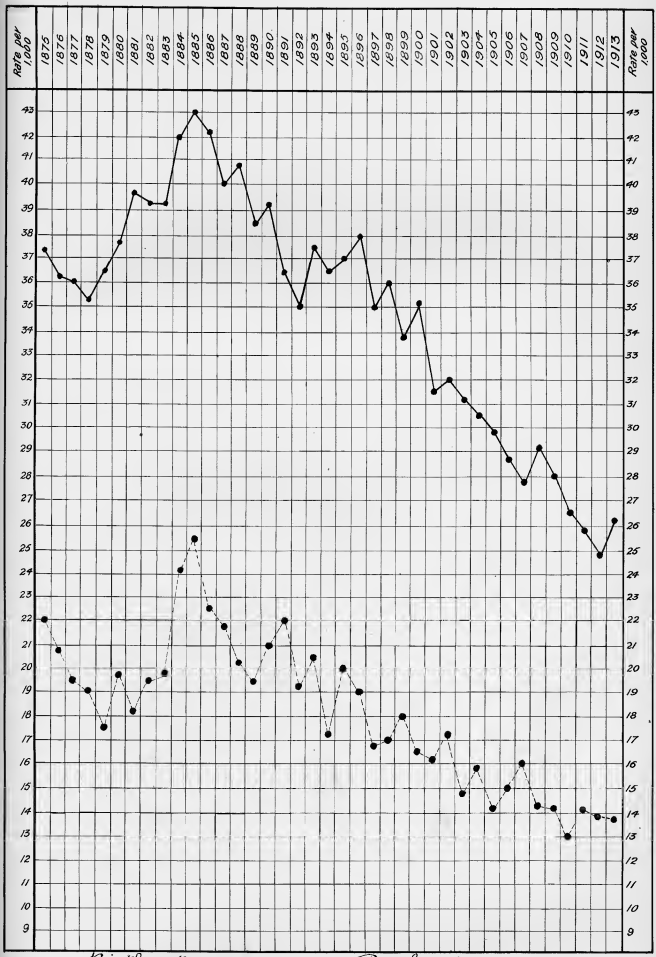


TABLE XXV.—Analysis of Births and Deaths in the City of Cardiff, in Registration Sub-Districts, and in Municipal Wards, during the year 1913.

LOCALITIES	*Population	Area in Acres (Land and Inland Water)	Persons per Acre	Births		Deaths		Deaths under 1 Year		Seven Principal Zymotic Diseases		Principal Zymotic Diseases.														Phthisis, Pulmonary Tuberculosis		Other Tuberculous Diseases.		Respiratory Diseases	
												Small-pox		Measles		Scarlet Fever		Whooping Cough		Diphtheria		Typhoid Fever		Diarrhœa							
				Number	Birth-rate	Number	Death-rate	Number	Number per 1,000 Births	Number	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate	Deaths	Death-rate
City of Cardiff ...	186,554	6,373	29	4,900	26·2	2,567	13·7	566	115	258	1·38	...	...	11	0·05	17	0·09	17	0·09	41	0·22	6	0·03	166	0·89	233	1·24	69	0·37	388	2·08
East Cardiff Registration Sub-Districts. Roath Ward ...	21,029	...	...	481	22·8	201	9·5	45	93	14	0·66	...	...	1	0·04	1	0·04	...	...	2	0·09	1	0·04	9	0·42	17	0·80	1	0·04	31	1·47
East Cardiff Registration Sub-Districts. Park Ward ...	24,503	...	...	509	20·7	265	10·8	51	100	24	0·97	...	...	3	0·12	...	...	1	0·04	8	0·32	...	...	12	0·48	14	0·57	7	0·28	37	1·51
East Cardiff Registration Sub-Districts. Splott Ward ...	18,479	...	...	595	32·2	263	14·2	66	111	28	1·51	...	...	1	0·05	1	0·05	...	...	5	0·27	...	...	21	1·13	16	0·86	5	0·27	53	2·86
East Cardiff	64,011	481	133	1,585	24·7	729	11·3	162	102	66	1·03	...	...	5	0·08	2	0·03	1	0·01	15	0·23	1	0·01	42	0·65	47	0·73	13	0·20	121	1·89
Central Cardiff Registration Sub-Districts. Central Ward ...	10,835	...	...	249	23·0	211	19·4	34	136	16	1·47	...	...	...	...	1	0·09	2	0·18	1	0·09	...	...	12	1·10	33	3·04	6	0·55	33	3·04
Central Cardiff Registration Sub-Districts. South Ward ...	10,224	...	...	271	26·5	217	21·2	33	121	9	0·88	...	...	1	0·09	...	...	1	0·09	...	...	...	...	7	0·68	30	2·93	7	0·68	38	3·71
Central Cardiff Registration Sub-Districts. Cathays Ward ...	23,430	...	...	620	26·4	313	13·3	78	125	46	1·96	...	...	3	0·12	4	0·17	8	0·34	5	0·21	1	0·04	25	1·06	30	1·28	10	0·42	40	1·70
Central Cardiff Registration Sub-Districts. Adamsdown Ward	13,611	...	...	349	25·6	227	16·6	45	129	22	1·61	...	...	...	...	3	0·22	...	...	3	0·22	...	...	16	1·17	15	1·10	5	0·36	33	2·42
Central Cardiff ...	58,100	3,832	15	1,489	25·4	968	16·6	190	127	93	1·60	...	...	4	0·07	8	0·13	11	0·18	9	0·15	1	0·01	60	1·03	108	1·85	28	0·48	144	2·48
West Cardiff Registration Sub-Districts. Riverside Ward...	18,258	...	...	361	19·7	221	12·1	28	77	9	0·49	...	...	...	...	1	0·05	1	0·05	2	0·10	...	...	5	0·27	23	1·26	6	0·32	32	1·75
West Cardiff Registration Sub-Districts. Canton Ward ...	24,812	...	...	669	26·1	300	12·0	72	107	34	1·37	...	...	1	0·04	1	0·04	3	0·12	4	0·16	3	0·12	22	0·88	32	1·29	7	0·28	45	1·81
West Cardiff Registration Sub-Districts. Grangetown Ward	22,753	...	...	796	34·9	349	15·3	114	143	56	2·46	...	...	1	0·04	5	0·22	1	0·04	11	0·48	1	0·04	37	1·62	23	1·01	15	0·66	46	2·02
West Cardiff	65,823	2,060	32	1,826	27·7	870	13·2	214	117	99	1·50	...	...	2	0·03	7	0·10	5	0·07	17	0·25	4	0·06	64	0·97	78	1·18	28	0·42	123	1·86

* The population of the whole city is that estimated by the Registrar-General, and the populations of the Registration Sub-districts and of the Municipal Wards are estimated on the basis of the number of inhabited houses in June, 1913.

INFECTIOUS DISEASES.—The 2,567 deaths from all causes included 258 from the principal infectious diseases. This number was equal to an inclusive death-rate from these diseases of 1·38 per 1,000 persons living, as compared with 1·96 the rate in 1912, and with 1·51, the average rate for the ten years 1903–1912.

The report of the Local Government Board on the number of cases of notifiable infectious diseases in England and Wales enables a comparison to be made of the incidence of these diseases in the several sanitary areas of England and Wales. The following table is compiled from the statistics contained in this report, and gives the number of cases of the principal infectious diseases in relation to the population of the areas concerned. This relation is given as the proportion of cases notified per 1,000 of the population, and is called the sickness-rate.

TABLE XXVI.

	Sickness-rate per 1,000.								
	Enteric Fever.			Scarlet Fever.			Diphtheria.		
	1911	1912	1913	1911	1912	1913	1911	1912	1913
England and Wales	0·38	0·23	0·22	2·90	2·98	3·57	1·32	1·24	1·39
England	0·38	0·23	0·22	2·84	2·95	3·51	1·33	1·24	1·39
Wales (including Monmouth) ...	0·38	0·21	0·23	3·66	3·35	4·52	1·30	1·27	1·40
Aggregate of County Boroughs :									
England	0·43	0·28	0·25	3·32	3·46	4·26	1·47	1·32	1·48
Wales (including Monmouth) ...	0·26	0·25	0·18	3·85	3·46	5·05	1·68	1·84	1·86
Cardiff	0·20	0·31	0·15	4·10	2·59	4·89	2·60	2·94	3·02

The mortality from these diseases in Cardiff was distributed in each quarter of the year 1913 as follows :—

	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.
Small-Pox	—	—	—	—
Measles	1	1	4	5
Scarlet Fever	2	5	2	8
Diphtheria	13	2	11	15
Enteric Fever	—	2	1	3
Whooping Cough ...	4	4	4	5
Diarrhœa	9	10	125	22

In the Registration Sub-Districts, the mortality during 1913 from these diseases was as follows :—

	No. of deaths.	Death-rate per 1,000
East Cardiff	66	1·03
Central ,, ...	93	1·60
West ,, ...	99	1·50

Diagram C.

City of Cardiff.

ESTIMATED POPULATION 1913—186,554.

DIAGRAM SHOWING

BIRTH RATE (BLUE) } PER 1,000 OF THE ESTIMATED
DEATH RATE (BLACK) } POPULATION, 1913.
DEATHS OF INFANTS UNDER 1 YEAR TO 1000 BIRTHS (GREEN) } IN EACH MUNICIPAL WARD
PERSONS PER ACRE (EXCLUDING DOCKS, INLAND WATER AND FORESHORE.) (RED)

BIRTH RATE FOR THE WHOLE CITY 1913, 26·2.
DEATH RATE FOR THE WHOLE CITY 1913, 13·7.

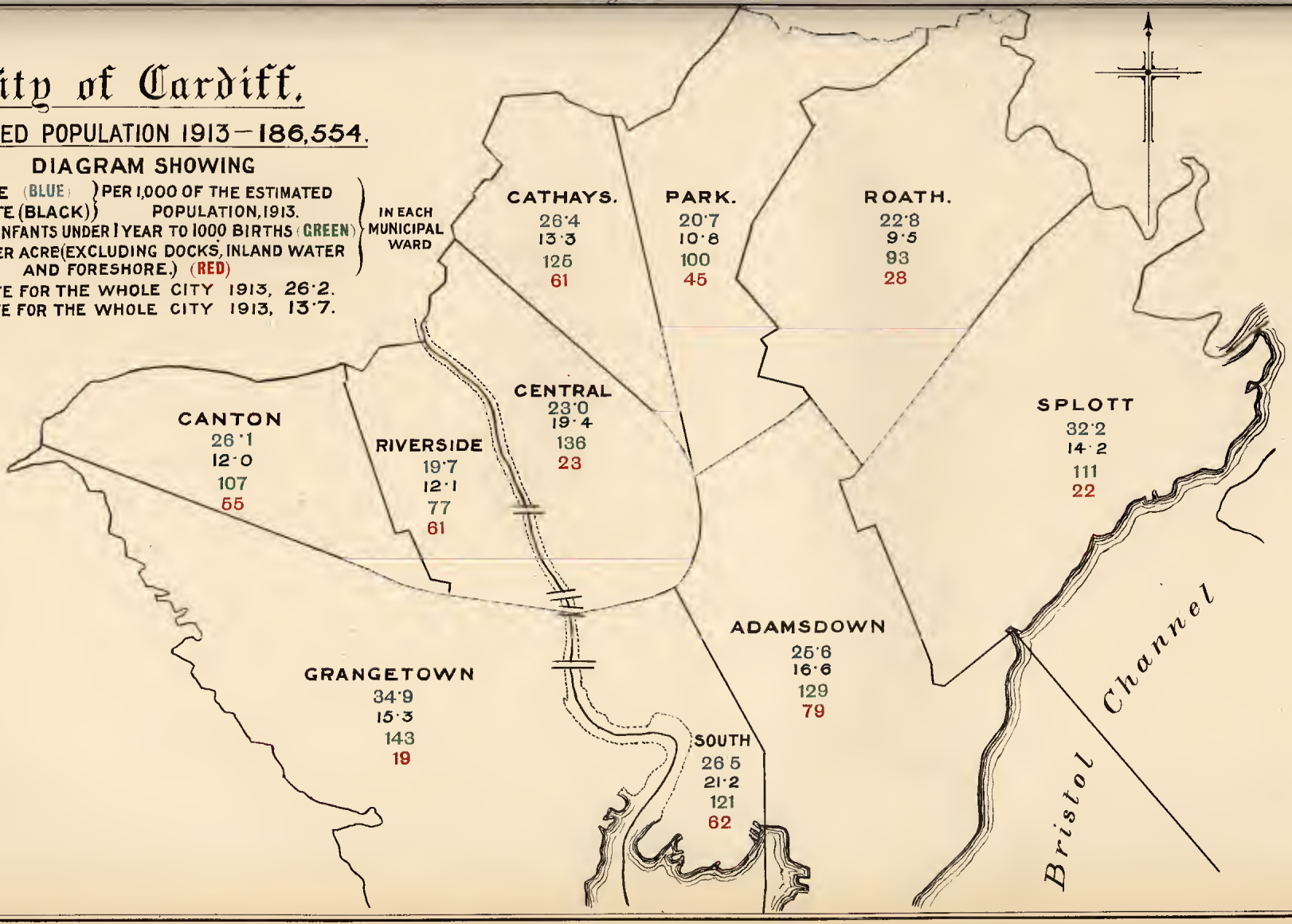


TABLE XXVII.

Death-rates from Infectious Diseases per 1,000 persons living in Cardiff :—

	1875—80	1881—90	1891–1900	1901–1910	1911	1912	1913
Small-pox	0·01	0·03	0·01	0·00	0·00	0·00	0·00
Measles	0·46	0·66	0·42	0·34	0·03	1·09	0·05
Scarlet Fever ...	1·00	0·41	0·17	0·10	0·08	0·04	0·09
Diphtheria	0·11	0·20	0·47	0·20	0·20	0·17	0·22
Whooping Cough ...	0·55	0·52	0·48	0·31	0·29	0·29	0·09
Enteric Fever ...	0·37	0·33	0·14	0·05	0·03	0·08	0·03
Diarrhœa	0·78	0·93	0·91	0·50	1·32	0·27	0·89

TABLE XXVIII.

The following table shows the number of cases of infectious disease notified in the City of Cardiff in each year since the adoption of the Infectious Disease (Notification) Act, 1889 :—

Year.	Small-Pox.	Diphtheria (including Membranous Croup).	Scarlet Fever.	Enteric Fever.	Typhus Fever.	Erysipelas.	Puerperal Fever.	Continued Fever.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Totals.
1890	—	72	335	150	—	45	4	2	—	—	608
1891	9	70	658	130	—	52	10	—	—	—	956
1892	5	164	1,851	118	—	95	12	3	—	—	2,248
1893	4	479	816	103	41	152	24	2	—	—	1,621
1894	10	343	577	62	1	135	19	3	—	—	1,150
1895	1	248	484	79	—	132	17	5	—	—	966
1896	45	306	874	74	1	134	21	7	—	—	1,462
1897	7	516	758	117	—	163	12	7	—	—	1,580
1898	—	960	332	80	—	133	18	6	—	—	1,529
1899	—	640	184	94	—	176	13	8	—	—	1,115
1900	4	714	383	95	4	106	15	5	—	—	1,326
1901	8	734	1,362	73	—	152	16	3	—	—	2,348
1902	2	701	1,433	69	—	169	13	7	—	—	2,394
1903	65	438	963	100	6	145	20	5	—	—	1,742
1904	11	406	658	40	—	112	12	2	—	—	1,241
1905	24	327	362	39	—	133	14	3	—	—	902
1906	2	333	776	77	—	117	17	1	—	—	1,323
1907	16	304	950	62	—	147	16	—	—	—	1,495
1908	—	291	475	55	—	167	15	1	—	—	1,004
1909	2	283	616	46	—	132	6	2	—	—	1,087
1910	1	363	887	36	—	137	8	—	346	—	1,778
1911	—	491	753	44	—	127	8	—	366	—	1,789
1912	—	536	472	56	—	170	11	—	499	—	1,744
1913	3	558	902	27	—	145	8	—	520	166	2,329

CARDIFF SANATORIUM.

Report of the Medical Superintendent for the year 1913.

	0 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	Totals.
Remaining in Hospital 28th Dec., 1912 :—								
Scarlet Fever	24	56	9	1	...	...	...	90
Diphtheria	8	31	1	...	...	...	...	40
Enteric Fever	...	4	...	1	...	...	...	5
Smallpox	...	...	...	...	...	1	...	1
Totals	32	91	10	2	...	1	...	136
Admitted during the year 1913 :—								
Scarlet Fever	186	459	44	15	2	...	...	706
Diphtheria	73	234	48	21	2	...	...	378
Enteric Fever	...	6	7	6	3	...	...	22
Smallpox	...	...	...	1	1	2	1	5
Totals	259	699	99	43	8	2	1	1,111
Totals under treatment in 1913 ...	291	790	109	45	8	3	1	1,247
Of the above there were discharged :—								
(*a*) Recovered :—								
Scarlet Fever	166	412	40	15	2	...	...	635
Diphtheria	66	233	45	20	2	...	...	366
Enteric Fever	...	8	3	6	1	...	...	18
Smallpox	...	...	...	1	1	3	1	6
Totals	232	653	88	42	6	3	1	1,025
(*b*) Died :—								
Scarlet Fever	10	3	...	...	...	...	...	13
Diphtheria	13	8	...	...	...	...	...	21
Enteric Fever	...	2	...	1	...	...	...	3
Totals	23	13	...	1	...	...	...	37
Remaining in Hospital 27th Dec., 1913 :—								
Scarlet Fever	34	100	13	1	...	...	...	148
Diphtheria	2	24	4	1	...	...	...	31
Enteric Fever	...	...	4	...	2	...	...	6
Smallpox	...	...	...	...	...	...	...	...
Totals	36	124	21	2	2	...	...	185
Totals under treatment in 1913 ...	291	790	109	45	8	3	1	1,247

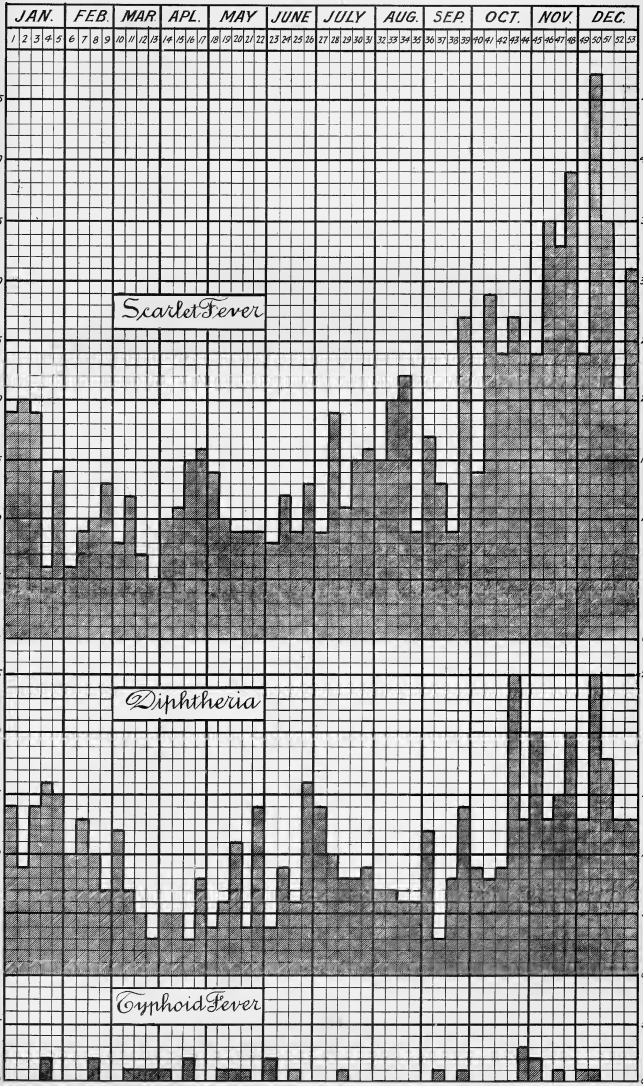
Mortality per cent. under treatment :—

Scarlet Fever	1·7	Enteric Fever	11·1
Diphtheria	5·02	Smallpox	Nil.

B. W. BROAD, M.B., *Medical Superintendent.*

Diagram 2.

SHOWING THE NUMBER OF NOTIFICATIONS OF SCARLET FEVER, DIPHTHERIA & TYPHOID FEVER IN CARDIFF DURING EACH WEEK OF THE YEAR 1913.



SMALL-POX.—Three cases of small-pox were notified during the year, none of which proved fatal.

Death-rate from small-pox in Cardiff since the year 1875 :—

YEARS.	DEATH-RATE PER 1,000
1875–1880	0·01
1881–1890	0·03
1891–1900	0·01
1901–1911	0·00
1912	0·00
1913	0·00

I am indebted to the Vaccination Officer for the following return of vaccinations within the City during the years 1905–1913 :—

TABLE XXIX.

Year.	Successfully Vaccinated.	Insusceptible.	Postponed.	Certificates of Exemption and Statutory Declarations.	Died Unvaccinated.	Unaccounted for and left the town.
1905	4,422	14	79	65	527	561
1906	3,475	20	101	76	525	810
1907	2,804	13	87	89	418	1,843
1908	3,183	20	87	429	466	894
1909	3,066	18	35	545	369	1,012
1910	2,784	11	69	683	380	597
1911	2,107	25	83	745	416	466
1912	2,718	14	28	1,041	369	230
1913	2,487	12	30	938	362	292

TABLE XXX.

The following table shows the condition as to vaccination amongst the notified cases of small-pox during the years 1906–1913.

Year.	No. of Cases.	No. of Deaths.	Vaccinated in Infancy.	Vaccinated later in life.	Re-vaccinated.	Un-vaccinated.
1906	10	2*	3	2	1	5
1907	15	1†	13	...	2	2
1908	...	...	...	...	...	...
1909	3	1*	1	1	...	1
1910	1	1†	1	...	...	...
1911	...	...	...	...	...	...
1912	...	...	...	...	...	...
1913	3	...	3	...	...	...
Totals	32	5	21	3	3	8

* Unvaccinated. † Vaccinated in infancy.

SCARLET FEVER.—Seventeen deaths were registered from scarlet fever during the year 1913, being equal to an annual death-rate of 0·09 per 1,000 persons living, as compared with 0·04 the rate in 1912, and with 0·08, the average rate in the ten years 1903–1912.

The mortality from scarlet fever throughout the country was as follows during the year 1913 :—

	Death-rate per 1,000
England and Wales	0·06
96 Great Towns	0·07
145 Smaller Towns	0·05
Cardiff	0·09

The number of cases of scarlet fever notified during the year amounted to 902, the largest number notified in any year since 1907, when 950 notifications of this disease were received. The sickness-rate, or rate of notified cases per 1,000 of the population, amounted to 4·89, as compared with 5·05, the aggregate of the four County Boroughs in Wales and Monmouth. In these Boroughs the sickness-rates relating to this disease were as follows :—

Merthyr Tydfil	3·96 per 1,000
Newport (Mon.)	9·55 ,,
Swansea	2·77 ,,
Cardiff	4·89 ,,

The sickness-rate in England and Wales was 3·57, and the aggregate of the County Boroughs in England was 4·26 per 1,000.

The number of cases of scarlet fever notified during each quarter of the year in the three registration sub-districts were as follows :—

Registration Sub-districts.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Totals
East Cardiff	53 ...	28 ...	25 ...	87 ...	193
Central ,, ...	43 ...	40 ...	67 ...	112 ...	262
West ,, ...	52 ...	77 ...	110 ...	208 ...	447

The age periods of persons notified to be suffering from scarlet fever and the percentage proportion of deaths to cases notified in each age period were as follows :—

Ages.	No. of Cases Notified.	Deaths.	Mortality per cent.
0– 1 year	4 ...	1 ...	25·0
1– 5 years	249 ...	12 ...	4·8
5–15 ,, ...	578 ...	4 ...	0·6
15–25 ,, ...	44 ...	— ...	—
25–65 ,, ...	27 ...	— ...	—

The following table shows the number of cases of scarlet fever notified in each year since 1891, and shows also the attack-rate, the death-rate, the proportion of deaths to cases notified, &c. :—

TABLE XXXI.

SCARLET FEVER.

Year.	Population.	No. of Cases Notified.	Attack rate per 1,000.	No. of Deaths.	Death rate per 1,000.	Percentage Removed to Hospital.	Mortality per cent. of Cases Notified.
1891	130,283	685	5·2	35	0·27	—	5·0
1892	132,895	1,851	13·1	87	0·65	13	4·7
1893	136,168	816	6·0	39	0·28	22	4·7
1894	139,519	577	4·1	8	0·05	31	1·3
1895	142,958	484	3·3	8	0·05	43	1·6
1896	146,479	874	5·9	28	0·19	48	3·2
1897	150,087	758	5·0	17	0·11	50	2·2
1898	153,783	332	2·1	8	0·05	56	2·4
1899	157,414	184	1·1	3	0·01	66	1·6
1900	161,452	383	2·3	11	0·06	65	2·8
1901	164,759	1,362	8·2	29	0·17	47	2·1
1902	166,473	1,433	8·6	36	0·21	48	2·1
1903	168,206	963	5·7	32	0·19	63	3·7
1904	169,957	658	3·8	25	0·14	72	3·3
1905	171,726	362	2·1	4	0·02	75	1·1
1906	173,512	776	4·4	3	0·01	74	0·4
1907	175,318	950	5·4	21	0·11	72	2·2
1908	177,143	475	2·6	10	0·05	78	2·1
1909	178,987	616	3·4	7	0·03	79	1·1
1910	180,849	887	4·8	19	0·10	78	2·1
1911	182,729	753	4·1	16	0·08	77	2·1
1912	184,633	472	2·5	8	0·04	81	1·6
1913	186,554	902	4·8	17	0·09	78	1·8

Scarlet fever prevailed somewhat extensively throughout the City during the year, the number of cases notified being larger than in any year since 1907. The disease was generally of a mild type, the spread of the infection being favoured by many unrecognised cases attending school and mixing with other children. The proportion of deaths to cases notified was 1·8 per cent. It will be seen on reference to the tables, that the chief incidence of the disease fell upon children at school ages. Of the seventeen deaths, thirteen, or 76 per cent., occurred amongst children under 5 years of age ; of the 902 cases of scarlet fever notified, 705, or 78 per cent., were removed to the Cardiff Isolation Hospital. The relation of the infection to school attendance is referred to in the Annual Report to the Education Authority. There was no indication of milk infection during the year, although careful inquiry was made into the source of milk supply in each case.

DIPHTHERIA AND MEMBRANOUS CROUP.—Forty-one deaths were registered from these diseases during the year, corresponding to an annual death-rate of 0·22 per 1,000 persons living, as compared with 0·17, the rate in 1912, and with 0·14, the rate in the ten years 1903–1912.

The mortality from diphtheria throughout the country was as follows during the year 1913 :–

	Death-rate per 1,000.
England and Wales	0·12
96 Great Towns	0·13
145 Smaller Towns...	0·11
CARDIFF	0·22

The number of cases of diphtheria and membranous croup notified during the year amounted to 558, as compared with 536 in 1912. The fatality, or proportion of deaths to cases notified, was 7·3 per cent. Of the cases notified, 379, or 67·9 per cent., were removed to the Cardiff Isolation Hospital.

Number and distribution of cases of diphtheria notified during each quarter of the year 1913 :—

Registration Sub-Districts.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Totals.
East Cardiff	41	30	56	62	189
Central ,, ...	33	21	21	25	110
West ,, ...	61	44	35	119	259

The number of notifications and the rate of fatality at various age periods during 1913, are shewn below :—

Ages.	Cases Notified.	Deaths.	Mortality per cent of cases notified.
0—1 year	3 ...	1 ...	33·3
1—5 years	118 ...	21 ...	17·8
5—15 years	344 ...	17 ...	4·9
15—25 years	56 ...	2 ...	3·5
25 years and upwards ...	37 ...	— ...	—

The following table shows the number of cases of diphtheria and membranous croup notified, the attack or sickness-rate, the death-rate, the proportion of deaths to cases notified, &c., in each year since 1891 :—

TABLE XXXII.

Diphtheria and Membranous Croup.

Year.	Population.	No. of Cases Notified.	Attack rate per 1,000.	No. of Deaths.	Death rate per 1,000.	Percentage Removed to Hospital.	Mortality per cent. of Cases Notified.
1891 ...	130,283 ...	70 ...	0·5 ...	16 ...	0·12 ...	— ...	22·8
1892 ...	132,895 ...	164 ...	1·2 ...	36 ...	0·27 ...	— ...	21·9
1893 ...	136,168 ...	479 ...	3·5 ...	93 ...	0·68 ...	— ...	19·4
1894 ...	139,519 ...	343 ...	2·4 ...	59 ...	0·42 ...	— ...	17·2
1895 ...	142,958 ...	248 ...	1·7 ...	46 ...	0·32 ...	3 ...	18·5
1896 ...	146,479 ...	306 ...	2·0 ...	55 ...	0·37 ...	3 ...	17·9
1897 ...	150,087 ...	516 ...	3·4 ...	90 ...	0·59 ...	15 ...	17·4
1898 ...	153,783 ...	960 ...	6·2 ...	129 ...	0·83 ...	21 ...	13·4
1899 ...	157,414 ...	640 ...	4·0 ...	61 ...	0·38 ...	46 ...	9·5
1900 ...	161,452 ...	714 ...	4·4 ...	81 ...	0·50 ...	53 ...	11·3
1901 ...	164,759 ...	734 ...	4·4 ...	78 ...	0·47 ...	47 ...	10·6
1902 ...	166,473 ...	701 ...	4·2 ...	88 ...	0·52 ...	46 ...	12·5
1903 ...	168,206 ...	438 ...	2·5 ...	36 ...	0·21 ...	51 ...	8·2
1904 ...	169,957 ...	406 ...	2·3 ...	31 ...	0·18 ...	47 ...	7·6
1905 ...	171,726 ...	327 ...	1·9 ...	23 ...	0·13 ...	56 ...	7·0
1906 ...	173,512 ...	333 ...	1·9 ...	13 ...	0·07 ...	56 ...	3·9
1907 ...	175,318 ...	304 ...	1·7 ...	23 ...	0·13 ...	59 ...	7·6
1908 ...	177,143 ...	291 ...	1·6 ...	22 ...	0·12 ...	62 ...	7·5
1909 ...	178,987 ...	283 ...	1·5 ...	14 ...	0·07 ...	62 ...	4·9
1910 ...	180,849 ...	363 ...	2·0 ...	24 ...	0·13 ...	68 ...	6·6
1911 ...	182,729 ...	491 ...	2·6 ...	37 ...	0·20 ...	67 ...	7·5
1912 ...	184,633 ...	536 ...	2·9 ...	31 ...	0·17 ...	76 ...	5·7
1913 ...	186,554 ...	558 ...	3·0 ...	41 ...	0·22 ...	67 ...	7·3

It will be seen on referring to the tables that the attack or sickness-rate was above the average in England and Wales and the aggregate of the County Boroughs, whereas the case fatality was comparatively low. It may be inferred therefore that the disease as affecting this district was of an unusually mild type.

In County Boroughs the highest rates occurred in Portsmouth, 4·00; Norwich, 3·20; Cardiff, 3·02; Southampton, 2·95; and Barrow-in-Furness, 2·71. The lowest rates occurred in Dudley, 0·25; Oxford, 0·35; Wigan, 0·38; Dewsbury, 0·54; and Bootle, 0·55.

During the year swabs were sent to the Cardiff and County Public Health Laboratory from the throats of 436 cases suspected to be diphtheria, the bacteriological examination giving positive results in 132 cases, and negative results in 304.

ENTERIC FEVER.—The number of deaths registered from enteric fever during the year amounted to six, being equivalent to an annual death-rate of 0·03 per 1,000 persons living, as compared with 0·08 in the year 1912, and with 0·05 the average death-rate in the ten years 1903–1912.

The mortality from this disease in the year 1913 throughout the country was as follows:—

	Death-rate per 1,000.
England and Wales	0·04
95 Great Towns	0·04
145 Smaller Towns	0·05
CARDIFF	0·03

The number of cases of enteric fever notified during 1913 was 27; of these 18, or 66·6 per cent., were removed to the Cardiff Isolation Hospital

The number of cases of enteric fever notified, the attack-rate, the death-rate, the proportion of deaths to cases notified, &c. since the year 1891, are shown in the following table:—

TABLE XXXIII.

ENTERIC FEVER.

Year.	Population.	No. of Cases Notified.	Attack rate per 1,000.	No. of Deaths.	Death rate per 1,000.	Percentage removed to Hospital.	Mortality per cent. of cases notified.
1891	130,283	130	0·9	26	0·19	—	20·0
1892	132,895	118	0·8	24	0·18	3	20·3
1893	136,168	103	0·7	18	0·13	12	17·4
1894	139,519	62	0·4	7	0·05	1	11·2
1895	142,958	79	0·5	14	0·09	13	17·7
1896	146,479	74	0·5	13	0·08	28	17·0
1897	150,087	117	0·7	20	0·13	34	17·0
1898	153,783	80	0·5	17	0·11	23	21·2
1899	157,414	94	0·5	19	0·12	52	20·2
1900	161,452	95	0·5	25	0·15	47	26·3
1901	164,759	73	0·4	11	0·06	57	15·0
1902	166,473	69	0·4	9	0·05	68	13·0
1903	168,206	100	0·5	14	0·08	76	14·0
1904	169,957	40	0·2	9	0·05	57	22·5
1905	171,726	39	0·2	8	0·04	58	20·5
1906	173,512	77	0·4	13	0·07	69	16·9
1907	175,318	62	0·3	13	0·07	56	21·0
1908	177,143	55	0.3	7	0·03	76	12·7
1909	178,987	46	0·2	7	0·03	78	15·2
1910	180,849	36	0·1	7	0·03	66	19·4
1911	182,729	44	0·2	7	0·03	70	15·9
1912	184,633	56	0·3	15	0·08	78	26·8
1913	186,554	27	0·1	6	0·03	66	22·2

The following table shows the death-rates per 1,000 from enteric fever in periods since the year 1875 in Cardiff :—

1875—80	1881—90	1891—1900	1901—1910	1911	1912	1913
0·37	0·33	0·14	0·05	0·03	0·08	0·03

The age periods of the persons notified to be suffering from enteric fever during the year, and the percentage mortality are given in the following table :—

TABLE XXXIV.

Ages.	Cases Notified.		Deaths.		Mortality per cent. of cases notified (both sexes).
	Male.	Female.	Male.	Female.	
Years.					
1— 5	...	...	...	...	...
5—15	1	5	...	...	...
15—25	4	6	1	...	10·0
25—45	7	3	3	1	40·0
45—65	1	...	...	1	100·0
Totals ...	13	14	4	2	22·2

It will be seen that the attack or sickness-rate per 1,000 of the population was comparatively low. In England and Wales this rate amounted to 0·22 ; in the County Boroughs the average was 0·25, as compared with 0·15 in Cardiff. In the County Boroughs the highest rates occurred in Wigan, 1·08 ; Canterbury, 0·61 ; Devonport, 0·55 ; Kingston-upon-Hull, 0·54 ; and Portsmouth, 0·53. The lowest rates were 0·04 in Bath and in Bournemouth ; 0·05 in Barrow-in-Furness ; 0·06 in Southport ; and 0·07 in Eastbourne, Oxford and Smethwick. The sickness-rates from enteric fever in the County Boroughs of Glamorgan were as follows in 1913 :—Swansea, 0·13 ; Merthyr Tydfil, 0·24 ; Cardiff, 0·15.

The rate in Cardiff compares favourably with that in 1912, which amounted to 0·31, being in that year raised above the average in consequence of an outbreak of enteric fever in an institution in the City.

Of the six deaths registered from this disease during the year 1913, three were of persons who contracted enteric fever abroad and who were ill on arrival in Cardiff. Two of the other fatal cases probably owed their origin to some infection in districts outside the City where they were employed.

TUBERCULOSIS. — The deaths from all forms of tuberculosis during the year 1913 amounted to 302, including 233 from pulmonary tuberculosis or phthisis. The mortality from phthisis was equal to an annual death-rate of 1·24 per 1,000, as compared with 1·27, the average rate in the ten years 1903–1912.

The mortality from phthisis and other forms of tuberculosis in Cardiff since the year 1880 is shown in the following table :—

TABLE XXXV.

Year.	Deaths from Phthisis.	Deaths from Other Forms of Tuberculosis.	Death-rate per 1,000 (Phthisis).	Year.	Deaths from Phthisis.	Deaths from Other Forms of Tuberculosis.	Death-rate per 1,000 (Phthisis).
1880	177	89	3·21	1897	206	131	1·99
1881	176	77	2·96	1898	203	117	1·32
1882	187	68	2·86	1899	208	119	1·32
1883	186	58	2·67	1900	212	110	1·25
1884	223	55	2·97	1901	179	122	1·05
1885	241	107	3·58	1902	224	98	1·34
1886	214	67	2·78	1903	217	93	1·28
1887	210	75	2·72	1904	246	98	1·44
1888	211	93	2·80	1905	235	103	1·36
1889	224	108	2·79	1906	229	95	1·31
1890	231	142	3·18	1907	220	91	1·25
1891	239	124	2·78	1908	218	94	1·22
1892	242	127	1·82	1909	234	74	1·30
1893	230	151	1·68	1910	216	88	1·19
1894	227	134	1·62	1911	235	81	1·28
1895	242	127	1·67	1912	244	64	1·32
1896	203	114	1·38	1913	233	69	1·24

TABLE XXXVI.

Death-rates from Phthisis per 1,000 persons living in the several Municipal Wards :—

	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
CARDIFF	1·28	1·44	1·36	1·31	1·25	1·22	1·30	1·19	1·28	1·32	1·24
Roath Ward ...	0·70	1·45	1·12	0·74	0·72	0·71	0·96	1·18	1·11	0·83	0·80
Park ,, ...	0·80	1·01	0·89	0·69	0·79	0·82	0·95	0·92	1·24	0·99	0·57
Splott ,, ...	0·60	0·54	0·96	1·12	0·59	0·81	0·69	0·76	1·19	1·09	0·86
Central ,, ...	1·60	1·83	1·43	1·23	0·62	1·22	0·81	1·77	3·44	2·64	3·04
South ,, ...	1·30	2·15	1·30	1·15	1·54	1·53	1·40	2·50	2·86	2·57	2·93
Cathays ,, ...	0·70	0·84	0·88	0·67	0·75	1·04	0·72	1·02	0·86	1·22	1·28
Adamsdown Ward ...	1·50	1·03	0·95	1·96	1·59	1·09	1·42	1·24	1·21	1·50	1·10
Riverside ,, ...	0·50	0·66	1·00	0·94	1·00	1·48	0·60	1·27	0·80	1·35	1·26
Canton ,, ...	0·50	0·88	1·17	0·78	1·02	0·76	0·98	1·05	1·04	1·17	1·29
Grangetown ,, ...	1·10	1·27	1·21	1·34	1·10	0·90	1·09	1·08	0·90	1·25	1·01

The new Public Health (Tuberculosis) Regulations, 1912, became operative on the 1st February, 1913. These regulations repeal the three series of regulations previously in force, they simplify the system of notification, and extend its operation to all forms of tuberculosis. The following is a statement relating to the notifications under these Regulations for that portion of the year 1913 in which they were in force.

TABLE XXXVII.

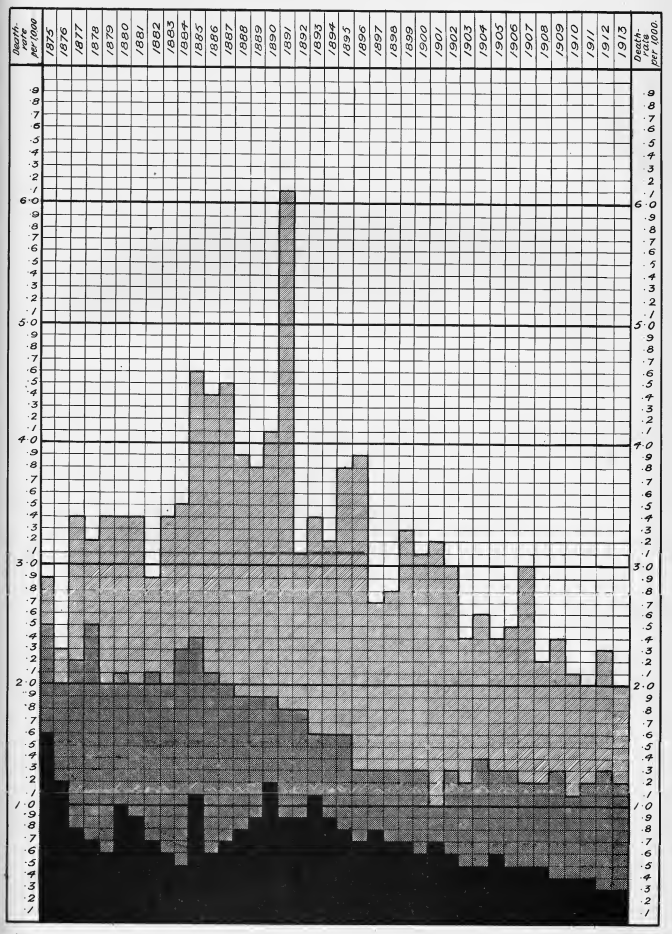
PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1912.

Summary of Notifications during the period 1st February, 1913—3rd January, 1914.

	Notifications on Form A.														Notifications on Form B.					Notifications on Form C.	
	Primary Notifications.													Total Notifications (i.e., including cases previously notified by other doctors).	Primary Notifications.				Total Notifications (i.e., including cases previously notified by other doctors).	Poor Law Institutions.	Sanatoria.
	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 & upwards.	Total			Under 5	5 to 10	10 to 15	Total.			
Pulmonary :—																					
Males	...	4	13	7	24	33	72	42	32	18	6	251	399		1	3	3	7	8	...	82
Females	3	1	14	14	26	34	51	36	21	9	4	213	287		...	2	...	2	2	...	45
Non-pulmonary :—																					
Males	5	14	17	14	9	11	5	3	2	...	...	80	87		...	2	...	2	2	...	3
Females	6	8	13	20	11	7	10	7	1	...	2	85	94		...	...	...	...	...	...	...
Totals	14	27	57	55	70	85	138	88	56	27	12	629	867		1	7	3	11	12	...	130

Diagram E.

SHOWING THE DEATH-RATES PER 1,000 OF THE POPULATION FROM RESPIRATORY DISEASES, PULMONARY TUBERCULOSIS AND OTHER TUBERCULOUS DISEASES IN CARDIFF, DURING THE YEARS 1875–1913.



Respiratory Diseases

Pulmonary Tuberculosis

Other Tuberculous Diseases

The Regulations of 1912 confer large powers upon the Councils of Counties and County Boroughs and upon Sanitary Authorities with respect to the prevention and treatment of tuberculosis in all its forms. In a circular letter of the Local Government Board, dated 20th December, 1912, it is pointed out that: "Sanitary Authorities are the bodies primarily concerned in the administration of the public health laws of this country, and they must occupy an important position in any general scheme dealing with tuberculosis. It is they who receive notifications of cases of pulmonary tuberculosis, and it is the duty of the Medical Officer of Health, on receiving notifications, to take such steps as may appear to be necessary or desirable for preventing the spread of infection, and for removing conditions favourable to infection." The Board also remind Sanitary Authorities of their responsibilities under the Public Health Acts and Housing Acts for the prevention of overcrowding, and for the correction of insanitary conditions which render houses unfit for human habitation and favour the spread of tuberculosis.

The Regulations (Article XIII) provide that a Local Authority, on the advice of their Medical Officer of Health, may supply all such medical or other assistance, and all such facilities and articles as may reasonably be required for the detection of tuberculosis, for preventing the spread of infection, and for removing conditions favourable to infection, and for that purpose may appoint such officers, do such acts, and make such arrangements as may be necessary. The Authority may provide and publish or distribute suitable summaries of information and instruction respecting tuberculosis and the precautions to be taken against the spread of infection.

The Public Health (Prevention and Treatment of Disease) Act, 1913, removes all doubt as to the powers of the County and Sanitary Authorities in this respect, by providing that "it shall be lawful for the Council of any County or any Sanitary Authority to make any such arrangements as may be sanctioned by the Local Government Board for the treatment of tuberculosis, provided that the powers conferred by this section shall be in addition to and not in lieu of any other powers."

The financial aspect of dealing with tuberculosis has been considerably modified by the National Insurance Act, 1911, which provides a fund out of insurance moneys, called "Sanatorium Benefit," to be administered by Local Insurance Committees, and which enables them to make arrangements with Local Authorities and other persons for the treatment in institutions and otherwise of patients suffering from tuberculosis in all forms. This "Benefit" may be applied at the discretion of the Insurance Committee, not only to the insured, but to the dependants of the insured. By these provisions, a very large proportion of the total sufferers from tuberculosis can be treated in some way by the money available for "Sanatorium Benefit" under the Insurance Act. As it is obvious that this money will be insufficient to meet the expenses of treating the insured and their dependants, the Act has made provision for meeting the deficiency by money provided out of the rates. It is certain, however, that, even with a liberal interpretation of the term "dependant," a considerable number of persons suffering from tuberculosis will either not be entitled to "Sanatorium Benefit," or will not be able to obtain it. If these are to be dealt with at all, it must be by means of money provided out of the rates by the Sanitary Authority.

Section 17 (2) and (3) of the Insurance Act provides that any estimated excess of expenditure over income caused by the treatment of the dependants of the insured may be met, as to one half by the Councils of Counties or County Boroughs, and as to the other half by the Exchequer. It was felt, however, that a method which would exclude from treatment a section of the community least able to provide for itself, would be an incomplete and unsatisfactory arrangement. The Government therefore decided that the Treasury should undertake a like responsibility in respect to the total deficiency incurred by any County Council or County Borough Council, in respect to a comprehensive scheme for the treatment of all classes of tuberculous patients, and provision has been made for this grant in the financial estimates. The allocation of this grant, as well as the sum available for capital expenditure in Wales, has been entrusted to the Welsh Insurance Commissioners, who in this and some other respects take the place assigned to the Local Government Board in England. The position in Wales differs, therefore, from that obtaining in England in some respects.

It is provided in the Insurance Act that the Commissioners in making grants of capital sums for the construction of institutions must have regard to the provision of such institutions by

any association established for Wales by Royal Charter. The King Edward VII. Welsh National Memorial Association has complied with this condition, obtained a charter, and has collected a sum of about £200,000.

The scheme recently sanctioned by the Insurance Commissioners provides that this grant, and the Government grant for maintenance and treatment due to the several Counties and County Boroughs and their Insurance Committees, shall be handed over to the Memorial Association, together with any money voted out of the rates, in order that the treatment of tuberculosis may be carried out upon a national basis. For this purpose all the available money derived from these several sources may be pooled by the Welsh Insurance Commissioners, and the grants will be calculated upon the net cost of the approved scheme, so that the whole Principality may be treated as a single unit. In a circular issued by the Commissioners, dated 9th April, 1913, in which they advert to a previous memorandum dealing with the administrative control and treatment of tuberculosis, and in which they invited Local Authorities and others to submit schemes for the provision of sanatoria and other institutions, they state that the only comprehensive scheme which has been submitted to them is that of the King Edward VII. Welsh National Memorial Association, this body having been assured of the financial support of the Welsh Councils, on the understanding that, so far as their resources permitted, treatment would be extended to all classes of the community.

So far as the Cardiff Insurance Committee is concerned, the effect of the arrangement will be that, subject to a small deduction for administrative expenses, the Committee will pay to the Memorial Association a sum equivalent to 9d. per insured person per annum for the institutional treatment of insured persons and their dependants suffering from tuberculosis.

The total amount available for Sanatorium Benefit (1/3 per insured person) has been reduced to 9d., as 6d. is now paid to the medical practitioners on the panel who undertake the domiciliary treatment of tuberculosis as part of "Medical Benefit."

The total amount available for providing institutional treatment for tuberculous patients resident in the City of Cardiff is estimated as follows :—

9d. per insured person	Approximately	£2,000
½d. Rate	,,	£2,000
Treasury Grant	,,	£2,000
		£6,000

The City Council, as the Sanitary Authority of Cardiff, did not officially submit a scheme to the Commissioners, as they had previously agreed to co-operate with the Memorial Association. The Health Committee, however, formulated a scheme which modified, and in my opinion improved in some directions, the proposals of the Association, without in any way diminishing the national character of these proposals. This scheme is comprised in the following resolutions adopted by the Committee on the 27th January, 1913 :—

"That the complete scheme of the Cardiff Sanitary Authority for dealing with Tuberculosis be carried out in conjunction with the Welsh National Memorial Association in the following way :—

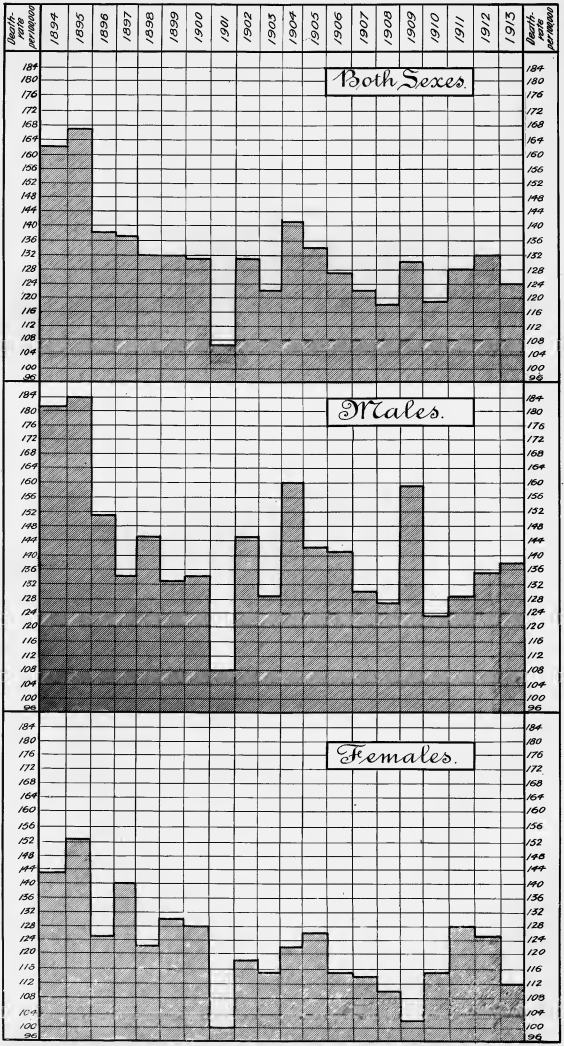
"That Sanatoria and Hospitals for the treatment of tuberculous persons be provided by the Memorial Association, who will provide accommodation therein for persons entitled to Sanatorium Benefit, and for the uninsured.

"That a Tuberculosis Dispensary (Institute) be provided by the Cardiff Sanitary Authority for the treatment of insured and uninsured persons suffering from tuberculosis, in accordance with the resolutions of the Health Committee confirmed by the Council on the 8th July, 1912.

"That the medical treatment at the Dispensary be carried out by the Tuberculosis Officer of the Memorial Association, and that the Sanitary Authority re-imburse the Association for the expenses of treatment of the insured and uninsured at the Institute.

Diagram F.

SHOWING THE DEATH-RATES PER 100,000 FROM PULMONARY TUBERCULOSIS IN CARDIFF DURING THE YEARS 1894—1913.



"That the Insurance Committee make arrangements with the Sanitary Authority for the treatment of persons entitled to Sanatorium Benefit.

"That the amount to be contributed by the Cardiff Sanitary Authority in connection with the scheme shall not exceed a contribution towards excess expenditure on maintenance of more than a rate of ½d. in the pound.

"That the scheme remain in operation for a period of three years from 23rd May, 1912.

"That these resolutions be forwarded at once to the Welsh Insurance Commissioners for their approval."

The resolutions were not, however, submitted to the Insurance Commissioners, as they were withdrawn at a subsequent meeting of the City Council, upon the informal representation of the Commissioners that they did not in all respects meet with their approval. It was understood that the Commissioners took exception to the clause which required the Insurance Committee to make arrangements for treatment directly with the Sanitary Authority.

The scheme, therefore, of the Memorial Association as it stands at present in its relation to the Cardiff Sanitary Authority is governed by the following resolutions, which have been accepted by the City Council :—

"(*a*) That Sanatoria and Institutions for Tuberculosis be provided, controlled and managed by the Memorial Association, subject to capital grants from the Treasury to the Association, and subject to the Association being re-imbursed the cost of main tenance.

"(*b*) That subject to capital grants from the Treasury to the Association, and subject to the Association being re-imbursed the cost of maintenance, all Tuberculosis Physicians, Institutes, Visiting Stations, and Hospitals under the scheme be provided, controlled and managed by the Association as part of the National Scheme . . . . . ."

Agreements have been entered into between the Memorial Association and all the Insurance Committees (including that of Cardiff) in Wales and Monmouthshire, whereby the Association will provide institutional and dispensary treatment for insured persons and their dependants ; the Committees in each case paying to the Association a sum equivalent to 9d. per insured person for this purpose. It is understood that this will amount in the aggregate to about £25,000 per annum; the amount from the Cardiff Insurance Committee being estimated at £2,010.

The share of the deficit to be paid by each County and County Borough Council will be proportionate to the assessable value of the Council's area, and is not to exceed the product of a half-penny rate for the period of the current year. In the case of Cardiff this will amount to about £2,000. A deficit will, of course, be the result of the Memorial Association extending the treatment of cases of tuberculosis to all classes of the community.

In their circular Med. 2 (Wales), dated 9th April, 1913, the Welsh Commissioners state that they will, "if they approve the estimates, pay half the deficit of the National Scheme out of moneys provided by Parliament, provided the Welsh Councils enter into agreement to find the other half of the deficit out of the rates." As the money from all these sources will go into a common fund to be administered by the Executive of the Memorial Association, the sanatorium and hospital accommodation provided by the Association will be available for the use in common by those recommended for institutional treatment resident in any part of Wales and Monmouthshire.

According to the Scheme published by the Memorial Association this accommodation will be roughly as follows :—

(*a*) Beds in Sanatoria.—Pending the erection or acquisition of sanatoria in Wales by the Memorial Association, arrangements have been made with the proprietors for the treatment of patients in existing sanatoria in other parts of the United Kingdom. The Association also possesses two sanatoria in Devonshire and two in Wales, with somewhat limited accommodation ; making altogether 205 beds now available. It is intended to erect two new sanatoria in Wales, and property has been acquired by the Association for

this purpose. These will ultimately provide accommodation for 154 adults and 30 children in the North Wales Sanatorium, and for 250 adults and 50 children in the South Wales Sanatorium.

(*b*) Beds in Hospitals.—At the present time 85 hospital beds are available in hospitals belonging to the Association, and 190 in hospitals belonging to other persons or authorities with whom the Association has made arrangements for the reception of patients; making a total of 275 hospital beds now at the disposal of the Association and available for the whole of Wales. Plans have already been prepared, and are now being considered by the Welsh Insurance Commissioners, which will provide 175 additional hospital beds, and it is understood that further accommodation will be required to the extent of about 214 beds; making altogether a total of 664, which will ultimately bring the number to about that suggested by the Departmental Committee on Tuberculosis. The amount of hospital accommodation required in any particular area will largely depend upon the use which is made of this institution. If the hospital is to be the final resting place for the incurable and the chief means of isolating the advanced infective cases, the number of beds required will probably be in excess of that suggested. If on the other hand it is used chiefly as a place of temporary residence for such cases, and with a view of educating patients in preventive measures, this number will probably suffice. The hospital for the Cardiff area is situated at Glan Ely, about three miles from the centre of the City, and contains at present fifty beds, with room for future extensions. It is proposed almost immediately to erect pavilions to accommodate sixty more patients.

(*c*) Tuberculosis Dispensaries or Institutes.—Wales and Monmouthshire have been provisionally divided (*by the Memorial Association*) into thirteen dispensary areas. The Cardiff area comprises the County Borough of Cardiff, the Urban Districts of Penarth and Barry, and the portion of Llandaff and Dinas Powis Rural District contained in the area of the Cardiff Union. The Dispensary or Institute originally established by the Cardiff Sanitary Authority, and situated at No. 10, The Parade, adjoining the Cardiff and County Public Health Laboratory, has been handed over to the Memorial Association, and is in charge of the Tuberculosis Physician appointed by the Memorial Association. Visiting stations have been established in connection with the Dispensary at Penarth and Barry. The Dispensary is therefore the first unit in the scheme. It serves as a receiving house and centre of diagnosis of patients suffering, or suspected to be suffering, from tuberculosis recommended for "Sanatorium Benefit" by the Insurance Committee, or recommended by the Medical Officer of Health, School Medical Officer, or any Medical Practitioner. The work of the Dispensary is of course intimately associated with the preventive work of the district in which it is located. Many of the patients attend the Dispensary for consultation and tuberculin treatment, but are at the same time in receipt of "domiciliary treatment" by a doctor on the panel, under the provisions of the Insurance Act. The Tuberculosis Institution is in charge of Dr. J. C. Gilchrist, Tuberculosis Officer for this area.

All patients residing in the district, and not being inmates of a sanatorium or a hospital, whether attending the Dispensary or under "domiciliary treatment" only, are, so far as preventive measures and the hygienic condition of their homes and surroundings are concerned, under the supervision of the Medical Officer of Health, who is required by Article XII. of the Tuberculosis Regulations, 1912, to "take such steps as are necessary or desirable for investigating the sources of infection, for preventing the spread of infection, and for removing conditions favourable to infection."

In the report of the Medical Officer of the Local Government Board for 1912–1913, the following remarks occur:—

"In investigating the source of infection it is always desirable to examine such contacts of the patient as are willing to be examined. Not infrequently the patient, although he is the first member of the family to come under observation, is not the original infecting case in the household. Hitherto the medical officer of health has been

handicapped, except in a few places, by the difficulty of securing expert aid in examining contacts, and has been obliged to carry out this investigation more or less imperfectly. Under the new conditions it is hoped that throughout the country the services of the tuberculosis officers will be available for this work.

"It will be observed that the medical officer of health is made responsible for the action needed to trace sources of infection, to prevent the spread of infection or to remove conditions favourable to infection. This responsibility rests with him whatever may be the local system or organisation as to tuberculosis. The officers of the tuberculosis dispensary acting independently can only deal with the cases attending the dispensary, including those applying for sanatorium benefit, and cannot undertake the work of cleansing, disinfection, or other sanitary improvements that may be needed.

"It is evidently necessary that arrangements should be made for co-ordinating the work of the medical officer of health and of the dispensary officers, though the exact system under which this can be most efficiently carried out will differ according to local circumstances.

"In county boroughs the necessary correlation between the work of the tuberculosis staff and of the medical officer of health can readily be secured, as the tuberculosis officer is usually a member of the public health staff. Arrangements as to domiciliary visitation—whether they shall be made by the staff of the dispensary or by other municipal officers—are then a question of internal administration. If the dispensary in a county borough is a voluntary institution, it is important that the arrangements made shall secure that officers of the dispensary making domiciliary visits should do so as officers of the sanitary authority."

Hence it is obvious that the most intimate official association must exist between the Medical Officer of Health and the Tuberculosis Officer, even when the latter officer is not on the staff of the former, as is usually the case throughout the country. This association is facilitated in Cardiff, and probably elsewhere, by the Health Visitors on the staff of the Medical Officer of Health, calling on certain days at the Dispensary, and arranging with the Tuberculosis Officer for the home visitation of cases under his care at that institution. They visit also other cases, insured and uninsured, whose condition and circumstances, in the opinion of the Medical Officer of Health, are such as to require visitation. The reports of the Health Visitor are made to the Medical Officer of Health, and are recorded on cards, which are filed and kept for reference in the Health Office, and the Tuberculosis Officer has access to the records of those cases in which he is concerned when the Health Visitor attends at the Dispensary. In this way no overlapping in the home visitation can occur, as it is carried out solely by the staff of the Medical Officer of Health.

It would hardly be necessary to emphasize the fact that the prevention of tuberculosis forms an important part of the duty of Sanitary Authorities, were it not that some misapprehension has arisen in some parts of Wales with respect to the function of the Memorial Association, to whom the institutional treatment has been referred by Insurance Committees and Sanitary Authorities. No voluntary association can relieve these authorities of any of their statutory duties and powers. They are responsible to the public for the preventive measures undertaken, and also under recent legislation for the treatment of tuberculosis, whether this latter is undertaken directly or by their officers, or indirectly on their behalf by other persons.

The Local Government Board in a circular to County and Borough Councils, dated 6th December, 1912, point out that the "unit for each scheme for dealing with Tuberculosis should be the County or the County Borough or combinations of these areas. Complete schemes will comprise two forms of institution, the dispensary and the sanatorium, the latter term being here used to cover various forms of residential institution. In some cases combinations may be desirable for the provision of sanatoria alone, the constituent authorities each providing dispensaries and beds for purposes of observation and education and for advanced cases. The Board look to the Councils of Counties and County Boroughs, or combinations of these bodies, to formulate complete schemes, even though parts of such schemes may in some instances be carried out by voluntary agencies.

The organisation of schemes must be undertaken as part of the public health administration of the area to which they relate, and the Medical Officer of Health should be the chief executive and organising officer."

In a letter dated October 5th, 1912, the Local Government Board expressed its views to the British Medical Association, as follows :—" The Board entirely agree with the view expressed in the Report of the Departmental Committee, that suitably qualified and experienced men should be selected for the medical appointments at dispensaries and other institutions for the treatment of tuberculosis. Inasmuch as the schemes for the provision of sanatoria and dispensaries are to be undertaken by the local authorities, it is essential both on administrative grounds and also in order to secure the co-ordination of treatment and of preventive measures, that the general supervision and control of the schemes should be in the hands of the Medical Officers of Health. The Board, however, contemplate that the Tuberculosis Officer of the Dispensary or the Medical Superintendent of the Sanatorium or Hospital, will, in clinical matters, be allowed independence of action."

The memorandum of the Society of Medical Officers of Health, submitted to the Departmental Committee on Tuberculosis, contains a paragraph which may be said to express the general opinion of all those officers who have had administrative experience in the control of tuberculosis. After describing the measures that public health authorities are now taking against this disease, the memorandum continues as follows :—" All cases of consumption in the district must be notified to the Medical Officer of Health. His authority possesses statutory powers to deal with the conditions of environment that favour the spread of the disease, to protect the food supply, to abate overcrowding, to require disinfection, to afford facilities for the early recognition of the disease, and to provide domestic and institutional treatment—educational and curative. This work, which is already large and increasing, must still be carried on by the public health authorities however the Sanatorium Benefit may be administered for the insured, inasmuch as a large number of tuberculous patients will be uninsured persons, and there are obvious advantages in carrying out the Sanatorium Benefit as part of the same administrative scheme. The existence in the same district of two distinct systems of administration, one under the public health authority for the uninsured, and one under some other authority for the insured, would manifestly lead to overlapping, unnecessary expense, and inefficiency. The Society of Medical Officers of Health are strongly of opinion that the arrangements for dealing with cases of tuberculosis, both among the insured, as well as the uninsured, should form part of one administrative system, having the Medical Officer of Health as its chief executive officer."

The full value of the excellent work of the Memorial Association can hardly be obtained unless it is properly co-ordinated with the work of County Councils and Sanitary Authorities, upon whom devolve the duty of preventing the spread of tuberculosis. The present arrangement with the Association must be regarded, therefore, as an imperfect, temporary expedient, subject to revision and to alteration in the direction of securing efficient administrative control to these authorities.

The Insurance Act makes provision for Local Insurance Committees to arrange for the institutional treatment of insured persons and their dependants with Local Authorities, who can either provide these institutions themselves, or make arrangements with the managers of institutions already established. The Act, Section 64 (3), also provides for the combination of Counties, County Boroughs and Local Authorities in making joint provision of this kind. One would naturally suppose, therefore, that these authorities, either alone or in combination with other authorities are the proper bodies to carry out complete schemes, " even though parts of such schemes may in some instances be relegated to voluntary agencies," and that Local Insurance Committees should make the necessary arrangements with these authorities or combinations. Such a joint committee could then make the arrangements contemplated by the Insurance Act with Local Authorities or other persons (including the Memorial Association) providing the necessary institutions. The operations of the Joint Committee would chiefly be confined to the treatment of cases of tuberculosis in sanatoria and hospitals, although probably a joint arrangement might also be found suitable for the provision of tuberculosis dispensaries in many of the districts under the control of administrative counties.

In County Boroughs and large Urban Districts, however, the first unit of the scheme, viz., the Tuberculosis Dispensary, should obviously form part of the public health department of the district. Even here advantage could be taken of the excellent medical arrangements of the Memorial Association, and the services of their staff could be utilized for the clinical work at the dispensary.

In this connection it must be remembered that, however useful institutional treatment may be when carried out on the best lines, it would be a misfortune if the present campaign, in which this form of treatment finds a prominent place, should in any way have the effect of diverting attention from other and perhaps more important methods of preventing the disease. If tuberculosis is to be stamped out, it must be attacked in the home.

Fortunately, we have in Cardiff comparatively few slums, but nevertheless I can conceive of no step more likely to reduce the prevalence of this disease, than the provision of a sufficient number of small, self-contained houses, with accommodation for one family, and let at a rental which would not necessitate the reception of lodgers. The records of the visits made by the Health Visitors to the homes of the consumptives constantly reveal the fact that, the reason why these persons are sleeping under unsatisfactory conditions is, in the majority of cases, the insufficiency of bed-room accommodation, due usually to the necessity which compels the occupier to receive lodgers, who contribute towards the expenses of the household. Houses, therefore, which are suitable for one family only, are frequently inhabited by two, and sometimes by three families; in these circumstances, decency of living can hardly be expected. If any scheme for preventing the spread of tuberculosis is to be successful in large centres of population, it must be under the control of the responsible Sanitary Authority, and must embrace measures calculated to improve the living and housing conditions of the poor, and to encourage them in habits of cleanliness, temperance, and healthy living.

The advantages of sanatorium and hospital treatment, both to the patient and to his friends and relations, must be freely admitted. From an educational point of view alone, the temporary residence in a well equipped and well managed institution must exert a beneficial influence, and it is probable that for some time to come resort must be had to this form of treatment for tuberculous persons. In the meantime, it is necessary that Sanitary Authorities should remember that this expensive and incomplete method of treatment is rendered necessary owing to the conditions under which many of the sufferers live. The real preventive measure is to be found, not in removing patients to a sanatorium for three months, and sending them home again to insanitary dwellings, but in the provision of suitable houses adapted to the domiciliary treatment of such cases. There is every reason to believe that this plan would prove more economical than that which is now adopted, and that it would in the end be more successful.

Recent researches connected with the pathology of tuberculosis, especially those of Hamburger, of Vienna, indicate that the disease is in many cases due to an infection in infancy or childhood, although there may be no obvious manifestation of it until adult life is reached. This observer states that "infection generally occurs during childhood, and that the use of the tuberculin reaction warrants the conclusion that the poorer classes in the population of large towns become infected in early life, for 95 per cent. of the children between the ages of eleven and fourteen give a positive reaction." It seems probable, therefore, that in many cases tuberculosis in the adult is the result of an infection occurring in childhood. In these circumstances, it is evident that preventive treatment should be applied early in life, and especially during school life. Sanitary Authorities and Education Authorities can each, therefore, contribute towards the eradication of the disease, by the adoption of suitable administrative measures. This aspect of the question is more particularly referred to in the Annual Report to the Education Authority.

The following tables give an analysis of the cases of tuberculosis which have been notified to the Medical Officer of Health in the City of Cardiff during the year 1913.

TABLE XXXVIII.

Deaths from Pulmonary Tuberculosis and Other Forms of Tuberculosis—age periods and sex :—

Age Periods.	Deaths from Tuberculosis.					
	Pulmonary			Non-Pulmonary		
	Males	Females	Totals	Males	Females	Totals
Under 1 year	1	1	2	8	10	18
1 and under 5 ...	3	...	3	10	8	18
5 ,, ,, 10 ...	...	5	5	3	3	6
10 ,, ,, 15 ...	4	5	9	2	2	4
15 ,, ,, 20 ...	10	7	17	3	3	6
20 ,, ,, 25 ...	10	19	29	3	1	4
25 ,, ,, 35 ...	28	30	58	4	2	6
35 ,, ,, 45 ...	25	20	45	3	2	5
45 ,, ,, 55 ...	25	8	33	1	1	2
55 ,, ,, 65 ...	18	8	26	...	...	...
65 and upwards ...	5	1	6	...	...	...
Totals	129	104	233	37	32	69

TABLE XXXIX.

Deaths from Pulmonary Tuberculosis and Other Forms of Tuberculosis in Municipal Wards :—

	Deaths from Tuberculosis.					
	Pulmonary			Non-Pulmonary.		
	Males	Females	Totals	Males	Females	Totals
Central	22	11	33	4	2	6
South	19	11	30	4	3	7
Cathays	11	19	30	4	6	10
Adamsdown	10	5	15	3	2	5
Riverside	14	10	24	4	2	6
Canton	15	16	31	4	3	7
Grangetown	13	10	23	6	9	15
Roath	11	6	17	1	1	2
Park	5	9	14	2	3	5
Splott	9	7	16	5	1	6
Totals ...	129	104	233	37	32	69

TABLE XL.

Notifications of cases of Pulmonary Tuberculosis and Other Forms of Tuberculosis—age periods and sex :—

Age Periods	Notifications of Tuberculosis.					
	Pulmonary			Non-Pulmonary		
	Males	Females	Totals	Males	Females	Totals
Under 1 year	...	3	3	5	6	11
1 and under 5 ...	5	1	6	14	8	22
5 ,, ,, 10 ...	15	17	32	18	13	31
10 ,, ,, 15 ...	11	15	26	14	20	34
15 ,, ,, 20 ...	27	30	57	9	11	20
20 ,, ,, 25 ...	37	39	76	11	7	18
25 ,, ,, 35 ...	75	55	130	5	10	15
35 ,, ,, 45 ...	46	43	89	3	7	10
45 ,, ,, 55 ...	36	25	61	2	1	3
55 ,, ,, 65 ...	20	10	30	...	...	...
65 and upwards	6	4	10	...	2	2
Totals ...	278	242	520	81	85	166

TABLE XLI.

Notifications of cases of Pulmonary Tuberculosis and Other Forms of Tuberculosis in Municipal Wards :—

Municipal Wards.	Notifications of Tuberculosis					
	Pulmonary			Non-Pulmonary.		
	Males	Females	Totals	Males	Females	Totals
Central	32	18	50	9	7	16
South	29	14	43	5	6	11
Cathays	31	31	62	14	11	25
Adamsdown	27	24	51	6	4	10
Riverside	21	20	41	8	7	15
Canton	28	20	48	9	10	19
Grangetown	31	26	57	9	8	17
Roath	19	22	41	10	10	20
Park	35	31	66	7	17	24
Splott	25	36	61	4	5	9
Totals	278	242	520	81	85	166

The two foregoing Tables include all cases notified during the year, both under the Public Health (Tuberculosis) Regulations, 1912, and under the Regulations previously in operation.

TABLE XLII.

Cases of Tuberculosis visited by the Health Visitors—in Municipal Wards, and whether "insured" or "uninsured" persons, or "dependants."

Municipal Wards.	Insured		Dependants		Uninsured		Totals
	Males	Females	Males	Females	Males	Females	
Central ...	15	4	2	7	5	3	36
South ...	12	2	4	7	4	2	31
Cathays ...	25	3	5	19	3	4	59
Adamsdown ...	17	3	4	11	2	12	49
Riverside ...	10	3	2	7	4	1	27
Canton ...	21	7	4	9	5	3	49
Grangetown ...	22	7	4	15	4	4	56
Roath ...	12	7	5	12	7	3	46
Park ...	21	9	3	12	8	11	64
Splott ...	10	8	7	23	6	4	58
Totals ...	165	53	40	122	48	47	475

The foregoing Table relates to cases visited only. The difference between the number of cases visited and the number notified, is due to some of the notified cases being in sanatoria, hospitals, etc., and consequently unvisitable, and to others not being traced by the Health Visitors, *e.g.*, casual lodgers in lodging houses, etc.

Occupations of the 475 patients visited :—

Accountants	1	Commercial Travellers	3
Apprentices	5	Cork-cutters	1
Bakers	3	Crane-drivers	1
Barmaids	1	Domestic Servants	19
Barbers	1	Dress-makers	6
Blacksmiths	3	Embroiderers	1
Boiler-makers	2	Engineers	1
Book-binders	2	Engineers (Marine)	2
Boot-makers	5	Errand Boys	3
Bottle-washers	2	Evangelists	1
Bus Conductors	1	Factory Hands	4
Butchers	1	Footballers (Professional)	2
Cabinet-makers	1	French Polishers	1
Canvassers	1	Gardeners	2
Cap-makers	1	Glaziers	1
Caretakers	2	Hauliers	4
Carpenters	3	Hauliers (Underground)	1
Charwomen	5	Hawkers	5
Chauffeurs	2	Housewives	84
Checkweighers	1	Horse Trainers	1
Children under School age ...	8	Iron-moulders	1
Clerks	21	Labourers	34
Clock-makers	1	Lath-renderers	1
Coal Trimmers	7	Laundresses	3
Colliers	3	Lightermen	1

Occupations of the 475 patients visited (continued).

Light-house Keeper	...	...	1
Lodging-house Keeper	...	...	1
Machinists	...	...	3
Manageress (Hotel)	...	...	1
Mat-makers	...	...	1
Milk Dealers	...	...	1
Milliners	...	...	1
Music Teachers	...	...	1
Needlewomen	...	...	7
Newsagents	...	...	1
No Occupation	...	...	35
Not Stated	...	...	1
Nurse	...	...	1
Organ-builders	...	...	1
Packers	...	...	3
Painters	...	...	2
Patent-fuel Workers	...	...	1
Photographers	...	...	2
Picture-frame Makers	...	...	1
Plasterers	...	...	2
Police Constables	...	...	2
Porters (General)	...	...	7
Postmen	...	...	1
Printers	...	...	3
Railwaymen	...	...	2
Rivet-warmers	...	...	1
School Children	...	...	65
School Teachers	...	...	5
Seamen	...	...	18
Shop Assistants	...	...	6
Shop-fitters	...	...	1
Shopkeepers	...	...	2
Soldiers	...	...	3
Steel Workers	...	...	2
Stokers	...	...	1
Stone Masons	...	...	4
Students	...	...	1
Switchboard Attendants		...	1
Tailoresses	...	...	4
Tailors	...	...	2
Tinsmiths	...	...	1
Tram Drivers	...	...	1
Typists	...	...	1
Wagon-makers	...	...	1
Waitresses	...	...	1
Wardrobe Dealers	...	...	1
Warehousemen	...	...	3
Warehousewomen	...	...	1
Wire-rope Makers	...	...	1
Total	...	...	475

Sleeping accommodation of 475 patients, as found by the Health Visitors at the time of the first visits :—

Patients with Separate Beds and Separate Rooms ...	189
Patients with Separate Beds but not Separate Rooms ...	54
Patients with neither Separate Beds nor Separate Rooms ...	225
Patients sleeping in Living Rooms	6
Not stated	1
Total	475

In 236 instances of the 475 cases visited, there was a definite history of relatives having been previously affected with the disease, as follows :—

Father	53
Mother	40
Brother	78
Sister	79
Husband	9
Wife	5
Son	11
Daughter	10
Paternal Relatives	62
Maternal Relatives	76
Other Relatives	49
Total	472

The total (472) is the number of relatives, as near as could be ascertained, the number of instances being 236.

RE-VISITS.

Re-visits paid to cases notified prior to 1st January, 1913 ...	...	...	544
Re-visits paid to cases notified during the year 1913 ...	...	...	574
Total ...	...	...	1,118

TABLE XLIII.

Cases admitted to and discharged from Sanatoria and Hospitals according to notifications (Forms C. and D.) received under the Tuberculosis Regulations, 1912 :—

Age Periods	Admitted			Discharged*		
	Males	Females	Totals	Males	Females	Totals
Under 1 year	...	...	...	...	...	...
1 and under 5 ...	...	...	...	...	...	...
5 ,, ,, 10 ...	...	1	1	...	...	...
10 ,, ,, 15 ...	3	2	5	2	3	5
15 ,, ,, 20 ...	9	11	20	6	6	12
20 ,, ,, 25 ...	15	10	25	14	6	20
25 ,, ,, 35 ...	27	15	42	17	10	27
35 ,, ,, 45 ...	23	5	28	22	3	25
45 ,, ,, 55 ...	7	1	8	16	3	19
55 ,, ,, 65 ...	1	...	1	3	...	3
65 and upwards	...	...	...	...	...	...
Totals ...	85	45	130	80	31	111

TABLE XLIV.

Cases sent to and discharged from Sanatoria and Hospitals by the Welsh National Memorial Association :—

	Admitted				Discharged*			
	Insured	Dependants	Uninsured	Totals	Insured	Dependants	Uninsured	Totals
Sanatoria	47	5	9	61	37	3	12	52
Hospitals	40	10	9	59	24	5	5	34
Totals ...	87	15	18	120	61	8	17	86

The above Table is compiled from notifications (Forms C. and D.) received under the Public Health (Tuberculosis) Regulations, 1912, and the figures given are included in Table XLIII.

* Several cases discharged were admitted before notification became compulsory under the Public Health (Tuberculosis) Regulations, 1912.

Applications to the Cardiff Insurance Committee for Sanatorium Benefit and form of treatment recommended by the Committee :—

Applications	150
Form of treatment :—	
Sanatorium	41
Hospital	33
Domiciliary	32
Institute (Dispensary)	27
No treatment	17

Many of the cases received more than one form of treatment ; the figures given above relate to the treatment recommended in the first instance only.

TABLE XLV.

New cases of Tuberculosis (residents of Cardiff) examined at the Tuberculosis Institute (Welsh National Memorial Association) :—

Age Periods.	Males	Females	Totals
Under 1 year	...	...	...
1 and under 5	3	2	5
5 ,, ,, 10	10	10	20
10 ,, ,, 15	10	16	26
15 ,, ,, 20	10	23	33
20 ,, ,, 25	27	25	52
25 ,, ,, 35	49	29	78
35 ,, ,, 45	32	14	46
45 ,, ,, 55	18	8	26
55 ,, ,, 65	10	...	10
65 and upwards	1	...	1
Totals	170	127	297

TABLE XLVI.

Distribution of Tuberculosis Institute cases in Municipal Wards and whether insured or uninsured persons :—

Municipal Wards	Insured	Uninsured	Totals
Central	9	10	19
South	10	10	20
Cathays	23	29	52
Adamsdown	7	14	21
Riverside	15	19	34
Canton	18	8	26
Grangetown	16	12	28
Roath	9	16	25
Park	22	20	42
Splott	13	17	30
Totals	142	155	297

INFANT MORTALITY.—The rate of infant mortality in Cardiff in the year 1913, calculated in the proportion of deaths under one year of age to 1,000 births registered, was at the rate of 115, compared with 110 in the year 1912, and with 123, the average rate for the ten years 1903–1912.

Rates of infant mortality throughout the country, as compared with that of Cardiff during 1913 :—

	Deaths under 1 year per 1,000 births.
England and Wales	109
96 Great Towns	117
145 Smaller Towns	112
England and Wales, less 241 towns	96
CARDIFF	115

TABLE XLVII.

Rates of infant mortality in Cardiff compared with the rates in the large towns and in England and Wales during past years :—

Period.	Deaths under 1 Year per 1,000 Births.		
	Cardiff.	Great Towns.	England and Wales.
1881—1890	165	162	141
1891—1900	161	172	153
1901	148	168	151
1902	145	145	133
1903	122	144	132
1904	144	160	146
1905	118	160	146
1906	134	145	133
1907	131	127	118
1908	124	128	121
1909	103	118	109
1910	111	115	106
1911	135	140	130
1912	110	101	95
1913	115	117	109

From the foregoing table it will be seen that, comparing the rates of infant mortality in the two periods 1881–90 and 1891–1900, an actual increase is shown in the latter decennium, both in England and Wales as a whole and in the large towns. In Cardiff a slight decrease in the mortality is shown in the later period. Since the year 1900 there has been generally a steady, but not a very considerable, decline in this mortality throughout the country. With two exceptions, the rate of infant mortality in Cardiff was below the average in the large towns. In the year 1907, the rate was 131, as compared with 127 in the large towns, and in 1912 it was 110, as compared with 101.

Diagram G

DEATHS UNDER ONE YEAR PER 1,000 BIRTHS IN CARDIFF.

1885 — 1913.

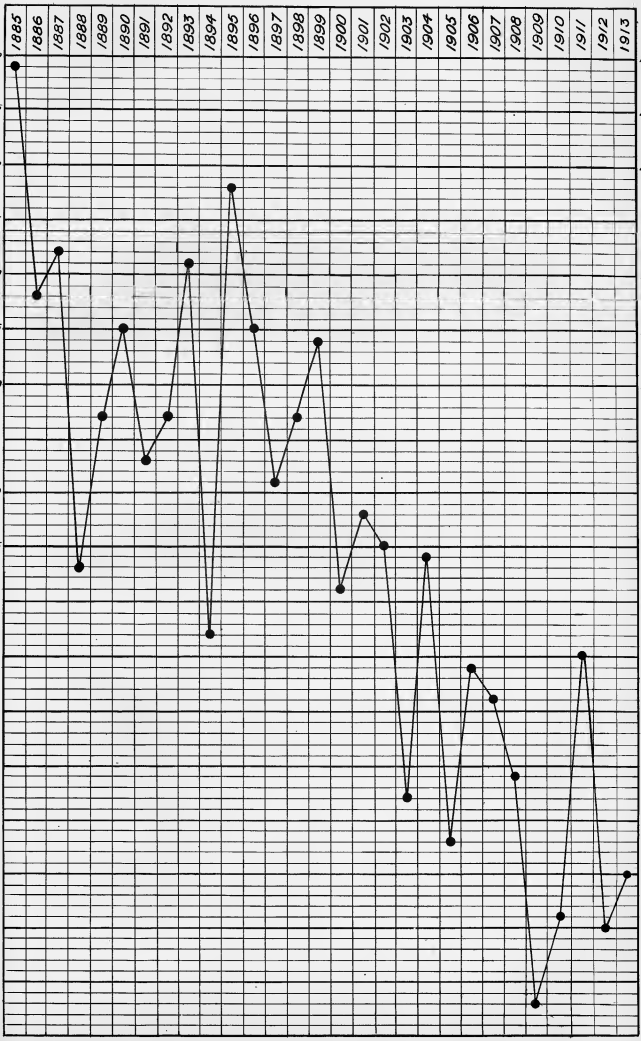


TABLE XLVIII.

The following table shows the rates of infant mortality in the several municipal wards, the highest rate in each year being underlined :—

	Deaths under one year per 1,000 births.									
	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Cardiff (Whole District) ...	144	118	134	131	124	103	111	135	110	115
Roath Ward	123	104	114	121	115	105	127	135	88	93
Park ,, ...	120	70	98	95	97	77	72	117	60	100
Splott ,, ...	163	144	146	135	130	84	109	152	93	111
Central ,, ...	164	129	211	180	135	96	179	160	199	136
South ,, ...	173	135	159	176	140	154	148	213	129	121
Cathays ,, ...	110	95	99	107	99	78	105	120	107	125
Adamsdown Ward ...	142	149	153	134	114	160	125	117	126	129
Riverside ,, ...	135	112	110	109	128	89	112	132	80	77
Canton ,, ...	134	105	118	102	127	101	94	120	115	107
Grangetown ,, ...	170	134	151	159	133	110	114	132	142	143

TABLE XLIX.

The chief causes of death amongst infants under one year of age in Cardiff during the years 1905–1913 are shewn in the following table :—

Cause of Death.	Deaths under one year of age.								
	1905	1906	1907	1908	1909	1910	1911	1912	1913
Premature Birth	74	87	95	113	89	96	97	91	115
Diarrhœa and Enteritis ...	76	147	80	141	77	77	201	44	125
Pneumonia	56	44	83	46	42	46	39	59	38
Bronchitis	43	59	54	30	33	46	26	53	40
Whooping Cough ...	18	41	30	25	30	11	32	22	9
Tuberculosis (all forms) ...	38	42	22	29	22	24	25	15	20
Atrophy and Debility ...	75	83	86	80	61	63	57	60	73
Convulsions	64	47	47	52	55	44	41	31	42
Measles	19	...	35	2	7	16	1	42	2
Congenital Defects	20	18	11	18	26	22	20	15	13

TABLE L.

Infant mortality rates in thirty-three large towns :—

Towns.	Deaths under one year per 1,000 births registered.			
	1906–1910	1911	1912	1913
London	114	129	90	105
West Ham	127	141	104	106
Croydon	97	106	76	93
Brighton	107	98	76	117
Portsmouth	110	126	82	90
Plymouth	127	145	107	124
Bristol	109	141	103	95
Swansea	144	136	100	127
Wolverhampton	129	135	88	130
Birmingham	145	164	112	128
Norwich	127	135	104	113
Leicester	137	132	110	119
Nottingham	152	162	117	129
Derby	111	123	79	101
Birkenhead	131	134	97	115
Liverpool	148	154	125	131
Bolton	136	163	98	144
Manchester	146	154	121	127
Salford	134	149	128	136
Oldham	139	160	117	139
Burnley	179	210	145	170
Blackburn	144	188	118	147
Preston	161	172	123	159
Halifax	81	123	81	101
Bradford	132	138	99	127
Leeds	134	158	101	133
Sheffield	138	140	106	128
Gateshead	142	136	103	122
Newcastle-on-Tyne	130	136	101	121
Huddersfield	107	132	96	102
Hull	136	155	101	128
Sunderland	136	151	115	134
CARDIFF	122	135	110	115

TABLE LI.

The following table indicates the difference between the mortality of legitimate and illegitimate infants in Cardiff during the years 1906–1913 :—

Year.	Births.		Percentage of illegitimate to total births.	Deaths under 1 year.		Deaths under one year per 1,000 births registered.		
	Total	Illegitimate		Total	Illegitimate	Total	Legitimate	Illegitimate
1906	5,001	172	3·4	675	59	134	127	343
1907	4,865	146	3·0	639	51	131	124	349
1908	5,172	193	3·7	644	63	124	116	326
1909	5,026	206	4·0	518	52	103	96	252
1910	4,822	191	3·9	537	57	111	103	298
1911	4,730	192	4·0	639	68	135	125	354
1912	4,597	169	3·6	509	45	110	104	266
1913	4,900	197	4·0	566	60	115	107	304

Table IV. in the Appendix gives the number of deaths from stated causes in weeks and months under one year of age during 1913. Summarising these tables for the years 1906–1913, the infant mortality at age periods per 1,000 births was as follows :—

TABLE LII.

Year.	Deaths per 1,000 births.				
	Under 1 week	Under 4 weeks	Under 3 months	3—6 months	6—12 months
1906	19·3	38·5	70·1	32·1	32·5
1907	23·6	39·0	65·3	22·6	43·4
1908	26·1	42·1	66·1	24·9	31·1
1909	22·2	37·0	56·5	18·9	27·6
1910	23·6	41·4	63·8	23·2	24·2
1911	23·6	41·0	64·4	30·4	40·1
1912	22·8	41·5	62·8	15·2	32·6
1913	26·3	42·2	65·5	23·2	26·7

In attempting to estimate the relative importance of the several factors concerned in the production of infant mortality, due regard must be paid to climatic and meteorological conditions, over which a sanitary authority has no control. The influence of these conditions is chiefly felt in the summer and autumn, when diarrhœal diseases amongst infants and young children prevail extensively, and are attended with a high rate of fatality. The rate of infant mortality in any one year depends, therefore, largely upon the amount and severity of these diseases during the summer months. Diagram H. shows very clearly the influence of temperature and rainfall upon the mortality from diarrhœa during the summer quarters (July, August, and September), and that the fluctuation in the annual rate of mortality amongst infants, depends to a great extent upon the meteorological conditions which prevail at this season. A hot and dry summer is found to be invariably associated with a comparatively high rate of infant mortality, whilst a cool summer, with abundant rainfall, has the effect of producing a low rate of mortality. Table LIII. also shows the effect of excessive temperature upon the mortality from diarrhœa.

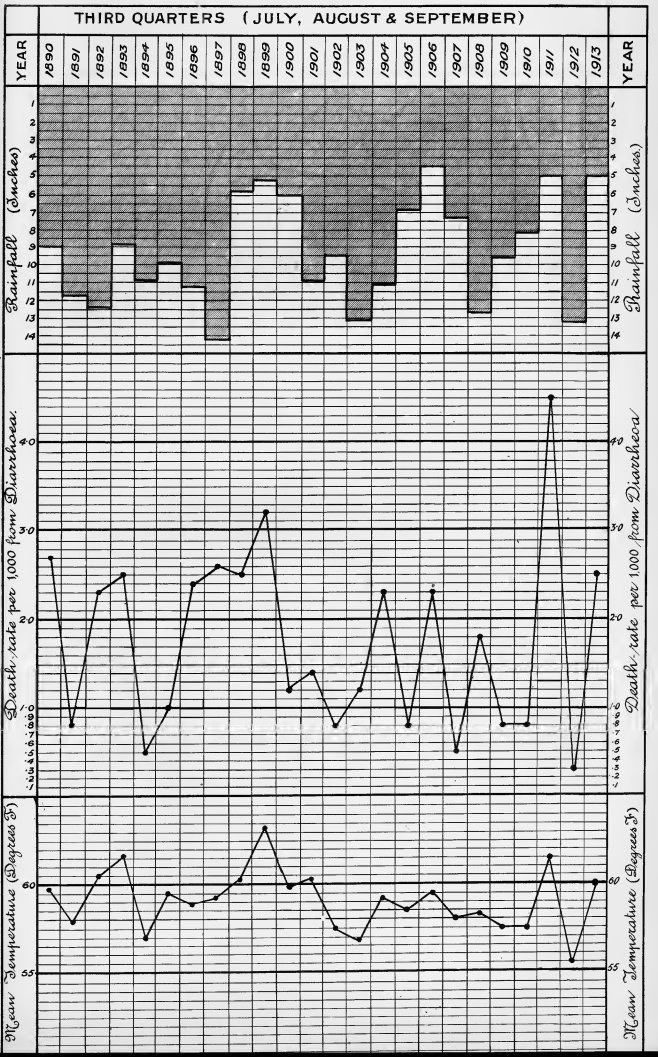
The following table shows the number of days with high maximum temperatures, and the number of deaths from diarrhœa, in Cardiff, during the months of July, August and September, 1906-1913.

TABLE LIII.

Period.		Number of days with maximum temperature between									Deaths from Diarrhœa
		°F. 50—55	°F. 55—60	°F. 60—65	°F. 65—70	°F. 70—75	°F. 75—80	°F. 80—85	°F. 85—90	°F. 90—95	
July,	1906	...	...	8	15	5	3	...	...	...	8
,,	1907	...	3	12	7	2	6	1	...	...	3
,,	1908	...	...	9	11	7	2	2	...	...	9
,,	1909	...	3	17	10	1	...	...	...	...	2
,,	1910	...	2	18	8	3	...	...	...	...	8
,,	1911	...	...	3	3	8	9	6	1	1	20
,,	1912	...	1	12	10	4	2	2	...	...	8
,,	1913	...	1	7	13	7	3	...	...	...	5
August,	1906	...	...	4	14	9	1	3	...	...	32
,,	1907	...	...	13	17	1	...	...	...	...	6
,,	1908	...	3	10	11	6	1	...	...	...	44
,,	1909	...	...	8	12	2	9	...	...	...	21
,,	1910	...	1	15	12	3	...	...	...	...	16
,,	1911	...	...	...	11	7	7	2	3	1	143
,,	1912	...	8	20	3	...	...	...	...	...	10
,,	1913	...	...	2	15	10	4	...	...	...	57
September,	1906	...	...	12	14	1	1	2	...	...	70
,,	1907	...	4	6	11	9	...	...	...	...	15
,,	1908	1	12	12	4	1	...	...	...	...	33
,,	1909	1	12	14	3	...	...	...	...	...	19
,,	1910	...	6	16	8	...	...	...	...	...	17
,,	1911	...	8	9	2	5	3	2	1	...	44
,,	1912	3	14	10	3	...	...	...	...	...	2
,,	1913	...	4	12	12	1	1	...	...	...	63

Diagram H.

SHOWING THE INFLUENCE OF THE RAINFALL AND MEAN TEMPERATURE ON THE DEATH-RATE PER 1.000 FROM DIARRHOEA IN CARDIFF DURING THE SUMMER QUARTERS OF THE YEARS 1890—1913.



There are, however, certain social and personal factors concerned in the causation of the mortality amongst infants which are capable of removal, and others which depend upon defective sanitation within the control of Sanitary Authorities. Poverty, intemperance, uncleanliness, ignorance, unsuitable food, overcrowding, offensive accumulations, imperfect removal of house and street refuse, all contribute to this end. In this district the industrial employment of married women does not, as in many places, play an important part in the production of infant mortality. Ignorance on the part of mothers, and of those who have charge of the lying-in mother and infant, is certainly responsible for many deaths. The abandonment of breast feeding soon after the birth of the infant, a practice which is frequently the result of prejudice or ignorance, and occasionally of physical disability, often results in fatal illness. A reference to Diagram I., showing the rates of infant mortality in the several wards in the town, indicates a marked difference in these rates. It is evident that social position, housing conditions, and environment, exert an important influence upon the rate of this mortality. Marked variations are found in a town amongst a community living in contiguous districts and under similar climatic conditions, but under very different social and hygienic conditions.

Table XLVIII. and Diagram I. show the variations in infant mortality in the several Municipal Wards in Cardiff during a period of years. It is seen that the wards which contain the greatest proportion of poor people, living under conditions in which a low standard of domestic hygiene prevails, have the highest rates of mortality, and that those which contain the greatest proportion of residents in comfortable circumstances have the lowest rates. The highest rates have always prevailed in the South, Central, and Adamsdown Wards, districts in which are to be found the most crowded areas, and the most unsatisfactory housing conditions, and in which the houses are for the most part old and badly constructed, with deficient ventilation and air space, with sanitary conveniences in common, and with no suitable provision or means for storing food ; also in which domestic cleanliness is impossible, or a difficult matter—houses which are mostly occupied by the poorest and most ignorant classes in the community. In these places are to be found mothers who display the most amazing depths of ignorance in the care and management of their infants. There is therefore to be seen a great difference in the success of bringing up a family, even amongst those who live under similarly unfavourable conditions. Lack of knowledge and care are responsible for many deaths of infants, whilst drunkenness and its attendant evils are responsible for many more. The personal factor seems to be as powerful for good or evil as the environment. The most promising feature in the campaign against infant mortality is the increasing desire for knowledge amongst the mothers in these poorer districts, as shown by the increasing numbers attending the " Infant Consultations."

The lowest rates of mortality are found in the Park Ward, which contains a large proportion of new and well constructed dwellings, wide streets, plenty of air space around the houses, little poverty or overcrowding, and in which a higher standard of sanitation and cleanliness is maintained ; and generally it will be seen that this mortality bears a close relationship to the social and sanitary condition of the district. Municipal sanitation differs little in the several wards ; all have the advantage of an ample and pure water supply, a water carriage system of sewerage, a regular removal of house refuse, and street cleansing. It is rather to the neglect of domestic and personal hygiene that the higher rate of mortality in certain districts must be referred.

In the poorer and more crowded parts of the town, the inhabited rooms are frequently very dirty, and the dirtier they are, the less inclination there seems to be on the part of the occupiers to admit fresh air. The disposal of the house refuse is generally unsatisfactory ; it is usually placed in any kind of receptacle, a broken tin or wooden box without a cover ; much of it is spilt on the roadway or backlane, or left in the passage of the house until removed by the scavengers. It is impossible to deal with this sort of untidiness by bye-laws and Acts of Parliament, but it is undoubtedly a potent factor, especially in hot weather, in the production of those ailments of infants which are so fatal in this season. Uncovered and unsuitable refuse receptacles, which permit all kinds of offensive animal and vegetable refuse to be scattered broadcast, form admirable breeding places for flies, which find their way into the houses, and are attracted to the milk and sugar and other imperfectly stored food. There is abundant reason for believing that these and other insects associated with dirt, convey poisons which produce diarrhœal diseases and death.

Much of the illness amongst young infants is due to the difficulty experienced by poor people in obtaining pure fresh milk, and in storing it in places where it can be kept cool and free from contamination. Carelessness in this respect is only too prevalent; it does not seem to be sufficiently recognised that cow's milk, under uncleanly conditions of storage and preparation, is a most dangerous food for infants.

In the poorer districts exist also the largest number of hand-flushed water-closets, which, although not indoors, are frequently situated in very small back yards, in close proximity to the windows or doors of the houses, and to any food which may be stored upon the premises. These closets are, as opportunity arises, being gradually provided with flushing tanks. It is to be regretted that neither the Public Health Acts nor the Bye-Laws confer power upon the Sanitary Authorities to effect this reform in all cases.

An equally urgent reform in municipal sanitation still remains incomplete, namely, the disposal of house refuse by means of destructors. Various tips are still in use, which in the summer are frequently a source of nuisance to the residents in the neighbourhood and to passers by, and form admirable breeding grounds for flies.

It has been frequently pointed out in annual reports that illness, particularly the summer diarrhœa of infants, may to some extent be attributed to the road dust which prevails in the very hot and dry weather, and that this nuisance could be abated by a much more plentiful supply of water to the roads in the summer months. Suggestions have been made, both by the Waterworks Engineer and myself, that some use could be made of the water from the Ely works for this purpose. This water is not very suitable for drinking purposes, but is occasionally used in times of extremely dry weather and deficient rainfall, when the supply from the Taff Fawr works runs short. This inconvenience will, however, no longer be felt when the new reservoir, now in course of construction, is complete.

NOTIFICATION OF BIRTHS ACT, 1907.—This Act, which was adopted in 1908, provides for the notification to the Medical Officer of Health of every birth within the City by the father, if residing in the house where the birth takes place, and by any person in attendance upon the mother at the time of, or within six hours after, the birth. The notification must be given to the Medical Officer of Health within thirty-six hours after birth.

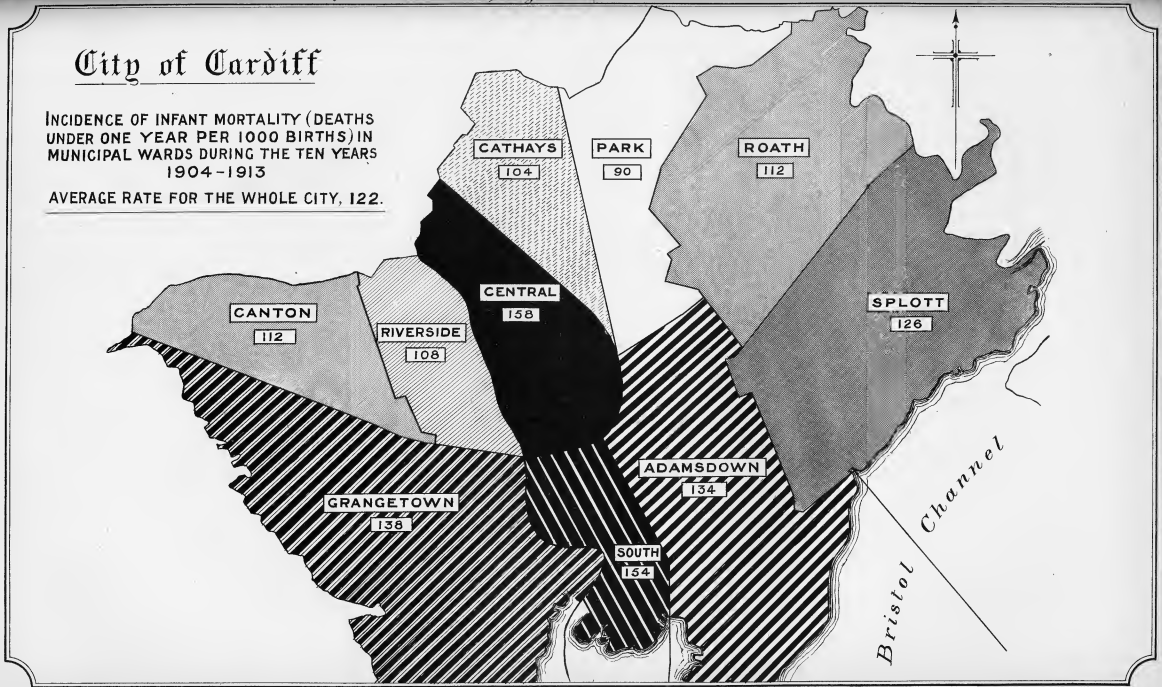
The following table gives the number of births notified under this Act in each quarter of the year 1913, together with the number of still-births notified.

TABLE LIV

1913.	Births notified by Midwives	Births notified by Doctors or Parents.	Duplicate Notifications Received.	Actual Number of Births notified.	Still-births notified.
1st Quarter ...	1,305	37	10	1,281	51
2nd ,, ...	1,202	44	13	1,166	67
3rd ,, ...	1,225	37	16	1,191	55
4th ,, ...	1,160	22	7	1,129	46
Totals ...	4,892	140	46	4,767	219

Births notified during the year 1913 4,767
Births registered during the year 1913 4,900
Number of still-born infants buried in the Cardiff Cemetery during the year 1913 243

It will be seen that 97·2 per cent. of the births registered were notified.


City of Cardiff
INCIDENCE OF INFANT MORTALITY (DEATHS UNDER ONE YEAR PER 1000 BIRTHS) IN MUNICIPAL WARDS DURING THE TEN YEARS 1904–1913
AVERAGE RATE FOR THE WHOLE CITY, 122.
CATHAYS
104
PARK
90
ROATH
112
CENTRAL
158
CANTON
112
RIVERSIDE
108
SPLOTT
126
ADAMSDOWN
134
GRANGETOWN
138
SOUTH
154
Bristol Channel

Since the adoption of the Notification of Births Act, it has been possible to undertake certain administrative work with a view of reducing the rate of infant mortality. A systematic attempt is made to impart instruction to mothers in the care and management of infants. This takes the form of weekly "Infant Consultations" and domiciliary visitations. The general supervision is undertaken by the Medical Officer of Health, and the actual work, which is of a most useful kind, was during last year carried out in a most efficient manner under the immediate direction of the Lady Assistant Medical Officer, Dr. Elder, and her successor, Dr. Creaser, assisted by Mrs. Huntley, Miss W. Jones and Miss B. King, the Health Visitors of the Sanitary Authority. No voluntary association is connected with this work, which is entirely municipal, and forms part of the health administration under the Health Committee of the Corporation.

"Infant Consultations" were established in Cardiff in the year 1909; six centres were formed in several parts of the town. Subsequently, in 1910, it was found more convenient to concentrate the work in one centre, in suitable rooms in the Department of the Medical Officer of Health in the City Hall, and since July in that year these "Consultations" have been held weekly on Tuesdays in these rooms. The mothers receive instruction in the feeding and management of their infants. These are weighed at each visit, the weight being recorded on charts; the mothers can readily observe the progress and development which is noted each week. The "Consultation" therefore serves as a centre of instruction for mothers and for expectant mothers. It is also utilized as a training centre for Health Visitors, School Nurses, and pupil Midwives, and is co-ordinated for this purpose with the theoretical course of instruction given in the classes of lectures and demonstrations in the University College and Technical School. It forms a useful link connecting the machinery of the Notification of Births Act and the Midwives Act, bringing all the workers in these departments into intimate touch and association.

It is capable also of further extensions in the direction of some supervision over the period of child life, which intervenes between infancy and admission to the Infants' Department of the Elementary School. It is found in the examination of school children in these Departments, that many of the ailments or physical defects to which these young children are subject, might have been prevented by earlier attention. This applies, of course, to the poorer classes, who cannot readily obtain skilled advice, and who perhaps are less apt to realise the importance of such assistance than those living under more favourable conditions. The actual medical treatment of sick children is not undertaken at the "Consultations;" when this is found necessary, the mother is referred to her own doctor, or to a hospital or dispensary. The treatment is preventive, the object being to instruct the mothers in the care and management of themselves and their infants, so as to avoid the necessity of actual treatment.

The individual babies under observation at the "Infant Consultation" and the attendances during the year 1913 were as follows, :—

	No. of Babies.	No. of Attendances.
1st Quarter	337	... 782
2nd ,, ...	412	... 1,008
3rd ,, ...	457	... 1,214
4th ,, ...	424	... 626

Altogether, 1,218 babies attended the "Consultations" during the year 1913; of these, 716 were regular attendants, and 502 casual visitors. Forty-eight "Consultations" were held during the year, with a total number of 3,630 attendances. The average attendance at each "Consultation" was 75·6.

The deaths among the infants attending the "Consultation" were as follows :—

1913	Under 12 months	Over 12 months	Total
1st Quarter	4	... — ...	4
2nd ,, ...	5	... — ...	5
3rd ,, ...	13	... 3 ...	16
4th ,, ...	4	... 1 ...	5
	—	—	—
	26	... 4 ...	30

The following table gives the number of infants, at ages under one year, who attended the " Consultation " during the year 1913.

Ages.	No. of Infants.
1—2 weeks	1
2—3 ,, ...	4
3—4 ,, ...	25
1—3 months	380
3—6 ,, ...	251
6—9 ,, ...	135
9—12 ,, ...	85
Total under 12 months	881

The deaths amongst 881 children under one year of age attending the " Consultation " amounted to 26, giving a rate of mortality of 29·3 per 1,000 infants attending under that age. It must be remembered, however, that very few infants are brought to the " Consultations " during the first fortnight of their lives, in which period the mortality is much higher than at later periods.

The ages at death and causes of death amongst the 26 children under one year of age were as follows :—

Ages.	Number.	Cause of Death.
Under 1 week ...	0 ...	—
1—2 weeks ...	0 ...	—
2—3 ,, ...	0 ...	—
3—4 ,, ...	2 ...	1 congenital syphilis ; 1 enteritis.
4 weeks to 3 months	3 ...	3 enteritis.
3—6 months ...	8 ...	5 enteritis ; 3 debility and convulsions.
6—9 ,, ...	5 ...	2 enteritis ; 1 tuberculosis ; 2 debility.
9—12 ,, ...	8 ...	3 tuberculosis ; 1 whooping cough ; 1 bronchitis ; 3 debility.

The Health Visitors (Mrs. Huntley, Miss Jones, and Miss King) paid a large number of visits to the homes of those mothers who most required and desired instruction from them. Altogether, 8,707 visits were paid, the number of infants visited within two weeks of their birth being 3,990.

Nature of food of 3,990 infants under one year of age visited by the Health Visitors :—

Breast fed	3,425
Breast fed and other food	223
Cow's milk	113
Cow's milk and other food	25
Condensed milk	139
Condensed milk and other food	33
Patent foods	32
Total	3,990

During the summer months, 97 fatal cases of diarrhœa amongst infants under one year of age came under the observation of the Health Visitors. Information relating to the nature of the food given to these infants is furnished in the following table :—

TABLE LV.

Nature of Food.	Under 3 months.	3—6 months.	6—12 months.	Totals.
Breast fed only	3	3	3	9
Breast fed and other food ...	2	3	4	9
Cow's milk	6	11	5	22
Cow's milk and other food ...	1	3	4	8
Condensed milk	11	11	18	40
Condensed milk and other foods	2	...	...	2
Patent foods	2	3	2	7
TOTALS	27	34	36	97

MIDWIVES ACT, 1902.—This Act has now been in operation since the 1st April, 1903, and is administered locally by the Health and Port Sanitary Committee, with the Medical Officer of Health as Executive Officer.

The Act provides for the education of midwives, and for the certification and enrolment of women qualified to act in that capacity. No person can now habitually act as a midwife, otherwise than under the direction of a qualified medical practitioner, unless she is certified under this Act. The Certificate of the Central Midwives Board can only be obtained after the training specified in the Rules of the Board, and after passing the Board's Examination. A certain number of midwives were, however, placed on the Roll of Midwives and certified in virtue of their having been in practice before the passing of the Act.

The rules regulating the course of training for the certificate of the Board specify that no person shall be admitted to an examination, unless she has undergone a course of theoretical and practical instruction in the subjects embraced by the examination, given by a teacher recognised by the Board, and unless she has attended and watched the progress of not fewer than twenty labours, and has nursed twenty lying-in women and their infants during the ten days following labour. This practical training must be carried out under the supervision of a medical practitioner approved by the Board for the purpose, or of a certified midwife or matron of an approved institution, or of any certified midwife approved by the Board. The Committee of the Queen's Nursing Institute have established a Maternity Department, and take pupils for the practical training of midwives. This training may also be obtained by the resident nurses at the Cardiff Union Infirmary. Five certified midwives in practice in Cardiff have been recognised by the Central Midwives Board for the purpose of giving practical instruction to pupil midwives.

A course of lectures has been established in connection with the Medical School of the University College of South Wales and Monmouthshire in Cardiff, intended to meet the requirements of candidates presenting themselves for the examination of the Central Midwives Board. Dr. E. J. Maclean is the teacher recognised by the Board for this purpose. He informs me that during the

year 1913 seventy-nine pupil midwives attended his course of lectures, of whom twenty-six were resident in Cardiff. The Cardiff City Council, through the Technical Instruction Committee, and the Glamorgan County Council, through the Education Committee, contribute towards the expenses of this course, and have the privilege of nominating pupils for free studentships in midwifery. Twelve such studentships are awarded annually to women residing in Cardiff.

Copies of the Rules of the Central Midwives Board are supplied to all practising midwives in the district, who are also supplied with printed instructions relating to the prevention of Ophthalmia Neonatorum. This disease is unfortunately somewhat common, and it has been ascertained that over one-third of the inmates of schools for the blind have lost their sight as a result of this disease. There is, however, no difficulty in saving the sight in these cases if they are brought under efficient treatment in the earliest stages of the disease.

The following instructions were drawn up at the request of, and issued in the form of a leaflet by, the Central Midwives Board :—

INFLAMMATION OF THE EYES IN NEWBORN CHILDREN.

OPHTHALMIA NEONATORUM.

This is a very common cause of *hopeless blindness*, which is one of the greatest misfortunes that can happen to a child. A very large number of children will be saved from blindness if the following directions of the Central Midwives Board are observed.

The disease generally arises from purulent discharges from the mother getting into the baby's eyes at birth.

It is therefore of the greatest importance that this should be prevented :—

1. By curing such discharges if possible before Labour. This requires medical treatment (Rule E. 19 (2) & (3)).
2. By taking the greatest care that such discharges shall not be carried into the baby's eyes when it opens them for the first time soon after its head is born.

The discharges may be carried into the baby's eyes in the following ways :—

(*a*) The discharges collect round its eyes, especially the eyelashes, and easily get into its eyes.

This can be generally prevented if the midwife observes Rule E. 14 : "As soon as the child's head is born, and if possible before the eyes are opened, its eyelids must be carefully cleansed." They should be thoroughly wiped with clean material such as cotton-wool, lint, or rag, using separate pieces for each eye. The reason for this is that the piece used for wiping the first eye will be polluted by the discharges, and should not be used for the other eye.

(*b*) Newborn babies sometimes rub their eyes with their hands. This may rub the discharges into their eyes. When Rule E. 14 has been complied with the baby's hands must be carefully cleansed.

(*c*) When the baby is bathed the discharges with which its body is covered during Labour are washed off into the bath-water. If its face is washed in this water, matter may get into the eyes.

N.B.—The above directions are to be observed in ALL cases, whether purulent discharges are known to be present or not.

The Central Midwives' Board is determined, so far as lies in its power, to secure the strict observance of its Rules and Directions, and to punish any failure to comply with them, even in cases where no harm can be proved to have followed from their neglect.

F. H. CHAMPNEYS, M.D., F.R.C.P.,
December, 1909. *Chairman of the Central Midwives Board.*

Under the Rules of the Central Midwives Board, midwives are required to advise medical treatment whenever there is any illness of the mother or child during pregnancy, labour, or lying-in, or in the case of any abnormality during this period. She must hand to the husband, or the nearest relative or friend present, the form of sending for medical help—Rule 22 (*a*)—send a copy of this form without delay to the Local Supervising Authority, and keep one herself. Amongst the complications in the case of the child which necessitate this procedure, is " inflammation of or discharge from the eyes, however slight." Under these Rules there is, however, no obligation on the part of the midwife to notify such cases directly, either to the Supervising Authority or to the Medical Officer of Health.

In view of the serious nature of the after consequences of Ophthalmia Neonatorum, the Local Government Board has now issued an Order, extending the compulsory notification of the disease to every Sanitary District in England and Wales. Under this Order, every medical practitioner or every certified midwife attending a child suspected to be suffering from the disease, is required to notify the same to the Medical Officer of Health. The Order came into operation on the 1st April, 1914.

Mrs. L. Huntley, the Inspector appointed by the Local Supervising Authority, who holds the Licence of the Obstetrical Society and is a Certified Midwife, has exercised a most efficient supervision over the practice of the midwives during the year.

The following tables give information relating to the administration of the Midwives Act during the year 1913.

Number of Midwives on Roll for 1913	126

QUALIFICATIONS OF CERTIFIED MIDWIVES.

Bona Fide	67
Certificate of London Obstetrical Society	8
Certificate of Central Midwives Board	51
Total	126

Particulars as to appliances, etc. possessed by Midwives :—	
Washable dresses	126
Bags for appliances	116
Appliances—complete	116
Appliances—part	10
Case books	116
Record books	116
Records of sending for medical help received from Midwives :—	
In the case of the mother	114
In the case of the child	36
Total	150

RECORDS OF SENDING FOR MEDICAL HELP BY MIDWIVES.

IN CASE OF THE MOTHER :—	
Abortion	3
Delay in Labour	44
Presentation Wrong	14
Ante-Partum Hæmorrhage	2
Post-Partum Hæmorrhage	5
Retained Placenta	6

RECORDS OF SENDING FOR MEDICAL HELP BY MIDWIVES.—con.

IN CASE OF THE MOTHER—con.

Ruptured Perineum	13
Pyrexia	6
Small Pelvis	6
Growth on Cervix	2
Placenta Prævia	1
Hour-glass Contraction	1
Eclampsia	1
Illness of Mother	10
	114

IN CASE OF THE CHILD—

Feebleness and Illness of Infant	18
Deformity	5
Still-births...	3
Large Infant	1
Discharging Eyes	6
Convulsions	2
Death	1
	36

Still-births notified by Midwives	219
Still-births attended by Midwives without Medical Practitioner...	7
Cases of Puerperal Fever attended by Midwives	6

MILK SUPPLY.—Closely associated with the question of infant mortality is that of the control of the milk supply to the public. Besides the powers conferred by the Public Health Act, 1875, the Public Health Acts Amendment Act, 1907, and the Infectious Disease (Prevention) Act, 1890, the Cardiff Sanitary Authority possesses special powers under the Cardiff Corporation Act, 1909.

The following notice is issued to all vendors of milk in the City of Cardiff :—

TO DAIRYMEN AND MILKSELLERS.

The attention of Milk Dealers is hereby drawn to the necessity of protecting milk from the access of dust, since it may be assumed that the air of the city always contains injurious particles. Especially is this the case when milk is retailed in small shops containing any other articles for sale. The danger is also very great when milk is sold from open cans in windy weather.

Disease is liable to be conveyed by milk when it is freely exposed to the air. It is therefore necessary that cans should be kept covered in such a way as to exclude dust, flies and infective particles.

Your attention is drawn to the following clauses of the Regulations in force in Cardiff relating to Dairies, Cowsheds, and Milkshops (a copy of which you have received) :—

Cleanliness of Milk-Stores and Milk-Shops.

"Every occupier of a milk-store or milk-shop shall cause every part of the interior of such milk-store or milk-shop to be thoroughly cleansed from time to time as often as may be necessary to maintain such milk-store or milk-shop in a thorough state of cleanliness."

For prescribing precautions to be taken by Purveyors of Milk and persons selling milk by retail against infection or contamination.

"Every purveyor of milk or person selling milk by retail shall take all reasonable and proper precautions, in and in connection with the storage and distribution of the milk, and otherwise, to prevent the exposure of the milk to any infection or contamination."

"He shall not deposit or keep any milk intended for sale in any room or place where it would be liable to become infected or contaminated by impure air, or by any offensive, noxious, or deleterious gas or substance, or by any noxious or injurious emanation, exhalation, or effluvium."

"He shall not keep milk for sale, or cause or suffer any such milk to be placed, in any vessel, receptacle or utensil which is not thoroughly clean."

"He shall cause every vessel containing milk for sale to be kept properly covered, or the milk contained in such vessel to be otherwise sufficiently protected from contamination by dirt or flies."

"He shall cause every vessel, receptacle, or utensil used by him for containing or measuring milk for sale or for its delivery at the houses of customers to be thoroughly cleansed with steam or clean boiling water, after it shall have been used, and to be maintained in a constant state of cleanliness."

"He shall not cause or suffer any cow belonging to him or under his care or control to be milked for the purpose of obtaining milk for sale—

(*a*) unless, at the time of milking, the udder and teats of such cow are thoroughly clean ; and

(*b*) unless the hands of the person milking such cow, also, are thoroughly clean and free from all infection and contamination."

If at any time disease exists among the cattle in a dairy or cowshed, the milk of a diseased cow therein may not be sold or used for human food, and any person having in his possession any cow suffering from tuberculosis of the udder, or from any chronic disease of the udder, or which is suffering from tuberculosis with emaciation, must immediately notify the fact to the Inspector of the Local Authority, City Hall, Cardiff.

In this case the term disease includes tubercular disease of the udder, and under the Cardiff Corporation Act, 1909, Section 42 (2),—"Every person who knowingly sells or suffers to be sold or used for human consumption within the city the milk of any cow suffering from tuberculosis of the udder shall be liable to a penalty not exceeding £10."

Your attention is also drawn to the Public Health (Milk and Cream) Regulations, 1912, which absolutely prohibit the addition of any preservative substance to milk intended for sale for human consumption, and of any thickening or preservative substance to cream containing less than 35 per cent. by weight of milk-fat.

No preservative substance other than boric acid, borax, or a mixture of these substances, or hydrogen peroxide, may be added to cream containing 35 per cent. or more of milk-fat, and such preserved cream may not be sold unless it is described as preserved cream, and unless the receptacle in which it is deposited for sale and delivered to the purchaser is labelled in the manner prescribed by the Regulations.

Copies of the Public Health (Milk and Cream) Regulations, 1912, may be purchased through any bookseller, or directly from Wyman & Sons, Ltd., Fetter Lane, London, E.C., and should be in the possession of every milk and cream vendor.

Any person neglecting to carry out these Regulations is liable to a penalty not exceeding £100.

EDWARD WALFORD, M.D.,
Medical Officer of Health.

City Hall, Cardiff.
July, 1913.

The Board of Agriculture and Fisheries have issued a Tuberculosis Order, which came into operation in May, 1913. The Tuberculosis Order of 1913 requires every person having in his possession or under his charge—

(i) any cow (including a heifer that has calved) which is, or appears to be, suffering from tuberculosis of the udder, indurated udder or other chronic disease of the udder ; or

(ii) any bovine animal (*i.e.* a bull, cow, or heifer or calf) which is, or appears to be suffering from tuberculosis with emaciation

to give information of the fact without avoidable delay to a constable of the police force for the area wherein the animal is, or to an Inspector of the Local Authority.

The Order further requires that the person in possession or having charge of the animal shall keep it isolated as far as practicable from other bovine animals, and keep it in his possession or under his charge until it has been examined by a Veterinary Inspector of the Local Authority, in accordance with the provisions of the Order ; provided that the animal may at any time be slaughtered by the owner or person in charge. In cases where the animal is giving milk, the milk must be boiled or otherwise sterilised and not mixed with other milk, and any utensil in which the milk has been placed before being so treated must be thoroughly cleansed with boiling water before any other milk is placed therein.

Any contravention of the provisions of the Order renders the person or persons concerned liable on conviction to a fine of £20.

The Order requires the Local Authority to cause every cow or other bovine animal coming within the above-mentioned category to be examined by a Veterinary Inspector, and if the Local Authority are satisfied from his report that the animal is suffering from tuberculosis of the udder or giving tuberculous milk, or is suffering from tuberculosis with emaciation, they are required to cause the animal to be slaughtered, subject to the consent of the owner being first obtained, and to pay compensation therefor in accordance with the provisions of the Order.

The Milk and Cream Regulations came into operation on the 1st October, 1912, and as regards Article V. (1) on January 1st, 1913. This Article relates to the description by the seller of preserved cream, upon advertisements, price lists, etc., showing that the article sold is cream to which preservatives have been added.

In a circular issued by the Local Government Board in August, 1912, it is explained that :—

"The Regulations are designed to secure that no preservative shall be added to milk, or to cream containing less than 35 per cent. by weight of milk fat, at any stage from the place of production to that of delivery to the purchaser. In the case of cream containing over 35 per cent. of milk fat, the addition of boric acid, borax or a mixture of these preservative substances, or of hydrogen peroxide, is not prohibited by the Regulations, but is subject to a system of declaration which is required to be followed by all persons dealing with such cream for the purpose of sale for human consumption. By this system (Part II. of the Regulations) it is intended that preserved cream as an article of commerce shall in all stages be differentiated from cream to which no preservative has been added. Further, Article IV. (*a*) prohibits the addition of any thickening substance to cream or preserved cream.

"It will be seen that except as regards Part III. the duty of administering the Regulations has been placed upon those authorities in England and Wales who are local authorities under the Sale of Food and Drugs Acts.

"Existing arrangements for the collection and examination of milk samples under the Sale of Food and Drugs Acts can readily be extended so as to enable the Council to receive such reports from the public analyst as are requisite. Arrangements will be required for the periodical examination of samples of cream for the purpose of ascertaining whether the requirements of the Order are being duly complied with.

"In the case of any contravention of the Regulations steps should be taken to ascertain the circumstances in which the default has arisen with a view to any necessary action. Article VI. requires that before the local authority institute proceedings against any person for contravention of any of the Regulations in Part II. of the Order, the local authority shall afford him an opportunity of furnishing an explanation and shall consider such explanation and all the circumstances of the case. It should be observed that the proceedings here in question are those authorised by the Public Health (Regulations as to Food) Act, 1907, and the enactments referred to in the Notice at the foot of the Order.

"It will be desirable that the Medical Officer of Health should be instructed to exercise general supervision over the action taken in pursuance of these Regulations, and that the officer of the Council who directs sampling under the Sale of Food and Drugs Acts should be instructed to confer with the Medical Officer of Health and with the Public Analyst as to the details of procedure necessary to secure the observance of the Regulations in the area over which the Council has supervision"

The following tables relate to the proceedings taken under the Regulations :—

TABLE LVI.

1. Milk ; and Cream not Sold as Preserved Cream.

	Number of samples examined for the presence of a preservative.	Number in which a preservative was reported to be present.
Milk	512*	2
Cream	20	10

* Samples taken under the Sale of Food and Drugs Acts, and included in Table LXVI.

TABLE LVII.

Nature of preservative in each of the foregoing twelve cases, and action taken under the Regulations in regard to same :—

No. of Sample.	Description.	Preservative present.	Action taken.
57	Milk ...	¼ grain of sodium nitrite per pint of milk	No action taken.
173	Cream ...	0·21% of boric acid ...	Explanation received from seller, who was cautioned by Local Authority.
175	,, ...	0·18% ,, ,, ...	Ditto. ditto.
176	,, ...	0·35% ,, ,, ...	Ditto. ditto.
241	,, ...	0·29% ,, ,, ...	Ditto. ditto.
242	,, ...	0·16% ,, ,, ...	Ditto. ditto.
243	,, ...	0·21% ,, ,, ...	Ditto. ditto.
292	Milk ...	Under 0·001% of boric acid ...	No action taken.
770	Cream ...	0·38% of boric acid ...	Explanation received from seller, who was cautioned by Local Authority.
830	,, ...	0·97% ,, ,, ...	Informal sample.
834	,, ...	0·32% ,, ,, ...	Ditto.
842	,, ...	1·02% ,, ,, ...	Explanation received from seller, who was cautioned by Local Authority.

2.—Cream Sold as Preserved Cream.

(*a*) Instances in which samples have been submitted for analysis to ascertain if the statements on the label as to preservatives were correct :—

(i)	Correct statements made	27	(Including	16	informal samples.)
(ii)	Statements incorrect ...	3	(,,	2	,, ,,)
	Total	30	(,,	18	,, ,,)

(*b*) Determinations made of milk-fat in cream sold as preserved cream :—

(i)	Above 35 per cent. ...	30
(ii)	Below 35 per cent. ...	...
	Total ...	30

(*c*) Instances where (apart from analysis) the requirements as to labelling or declaration of preserved cream in Article V. (1) and the proviso in Article V. (2) of the Regulations have not been observed :—

2 (see over ; samples 172 and 846).

TABLE LVIII.

(*d*) Particulars of each case in which the Regulations have not been complied with, and action taken :—

No. of Sample.	Infringement.	Action taken.
172	Cream deposited for sale in a vessel that was not labelled	Cautioned by Local Authority.
829	Contained 0·72% of boric acid ...	Explanation received from seller, who was cautioned by Local Authority.
828	Ditto ditto. ...	Informal sample.
835	Contained 0·69% of boric acid ...	Informal sample.
846	Cream deposited for sale in a vessel that was not labelled	Cautioned by Local Authority.

3.—Thickening Substances.—Any evidence of their addition to cream or to preserved cream :—

Nil.

During the year several samples of milk were submitted to the Cardiff and County Public Health Laboratory for bacteriological examination. The systematic examination of milks for tubercle bacilli commenced in October, 1911, and has been continued regularly since that date. It is hoped that in the near future it will be possible to extend in many directions the work carried out so thoroughly and efficiently by the workers in this Laboratory. At the present time the examinations and special investigations on behalf of the Medical Departments of the Sanitary and Education Authorities are greatly restricted owing to insufficient staff and lack of accommodation.

There is now much evidence showing the relation of tuberculous milk to tuberculosis of children. The importance, therefore, of efficient arrangements for the bacteriological examinations of milk supplies is sufficiently obvious. Bacteriologists are agreed that the tubercular lesions of the cervical and mesenteric glands so common in children are largely due to infection by the bovine bacillus introduced into the system by milk. It is estimated that in children at least one-third of the cases of tuberculosis of all kinds are due to the bovine bacillus, and in the final Report of the Royal Commission on Tuberculosis it is stated that 22 per cent. of persons dying before the age of fifteen years from tuberculosis of various organs were infected with the bovine bacillus. A recent investigation of cases of tuberculosis in bones and joints occurring in the surgical wards of the Hospital for Sick Children, Edinburgh, revealed the fact that amongst forty-seven children under five years of age, thirty-five were infected by the bovine bacillus, and it was ascertained that twelve out of the sixteen under two years of age were fed from the first on unsterilized cow's milk. These investigations point to the conclusion that milk containing the bacillus of tuberculosis is responsible for the illness and death of a large number of children. It has, however, been pointed out that the fact of "bacilli of the bovine type being found in tuberculous children is no proof that the children were infected by tuberculous cattle ; the source of infection may have been other human beings infected with tubercle bacilli of a similar bovine type."

In Cardiff the cows are examined by our Veterinary Surgeon three times a year at least, and a bacteriological examination of the milk of any animal suspected to be tuberculous is made in the Public Health Laboratory. But as the greater part of the milk supply to the City comes from a distance by rail, there is no guarantee that the cows in these distant places have

ever undergone a veterinary examination. In these circumstances it is imperative that samples of the mixed milk brought from outside the City should be systematically examined at our Laboratory for the presence of the bacillus. This is done as far as possible, although much more could be effected in this direction if the accommodation and equipment of the Laboratory were extended.

Thirty samples of mixed milk were taken in Cardiff, including the milk from 1,029 cows supplying milk to the City. In only one sample was there any evidence of the presence of tubercle bacilli. Of these samples, five came from cows in cowsheds in Cardiff, and twenty-five were taken at railway stations from milk cans consigned to Cardiff dealers. The five samples contained the mixed milk from 89 cows. Altogether the mixed milk from 1,029 cows supplying the City of Cardiff were examined, including that from 89 cows in the Cardiff cowsheds, and that from 940 cows in farms and cowsheds outside the City. The sample giving the positive result came from an outside district.

When a positive result is obtained with mixed milk, a thorough veterinary inspection is made of all the cows from which this milk is derived, and further samples are taken from individual cows ; these samples are separately examined by microscopical methods and by inoculation tests. Cows found to be supplying tuberculous milk or suffering from diseased udders can then be dealt with under the Tuberculous Order, 1913, of the Board of Agriculture and Fisheries.

FOOD INSPECTION.—The inspection of meat at the Public Abattoirs has been carried out satisfactorily during the year, under the arrangements set forth in the Annual Report for 1909. Mr. J. P. Mullane, M.R.C.V.S., is the Chief Meat Inspector, with two Inspectors under his direction, each holding the Certificate for Inspectors of Meat and other Foods of the Royal Sanitary Institute. Since all the slaughtering of animals is carried on at the two municipal slaughter-houses, there is no difficulty in securing an efficient inspection of meat before it is sold for human consumption.

The Inspectors have directions to pay regard to the recommendation of the Select Committee of the House of Commons on the Tuberculosis (Animals) Compensation Bill, 1904, to the effect that, " If a butcher who is in possession of tuberculous meat has notified the fact to the proper authority as soon as he could be reasonably expected to be aware of it, the case should not be taken into Court." The principles laid down by the Royal Commission on Tuberculosis in their report of 1898, with respect to the degree of tubercular disease which should cause a carcase or part thereof to be seized, are observed, although generally no difficulty is experienced in obtaining the owner's consent to the destruction of meat found to be unfit for food, either by reason of tuberculosis or other conditions.

Mr. G. M. McGregor, Certified Inspector of Meat and Other Foods, who was formerly a butcher, acts in the capacity of Inspector of Meat and other Foods in shops, markets and wholesale stores within the City, and assists in the inspection of meat at the slaughter-houses.

In connection with meat inspection, the facilities provided at the Public Health Laboratory are utilized for the purpose of diagnosis.

In the following tabular statements particulars are given with reference to diseased or unsound food dealt with during the past year.

TABLE LIX.

Animals slaughtered at the Municipal Slaughter-houses during the year 1913 :—

	Roath Abattoir.	Canton Abattoir.	Totals.
Cattle	6,788	698	7,486
Sheep and Lambs	36,569	4,739	41,308
Calves	5,413	235	5,648
Pigs	17,052	3,351	20,403
Totals	65,822	9,023	74,845

TABLE LX.

Unsound carcases of meat surrendered at Abattoirs and destroyed by arrangement with the owners :—

Place.	Carcases of				Totals.
	Beef.	Mutton and Lamb.	Veal.	Pork.	
Roath Abattoir ...	42	59	14	36	151
Canton Abattoir ...	3	1	1	11	16
Totals ...	45	60	15	47	167

TABLE LXI.

Causes of destruction of carcases :—

Cause.	Beef.	Mutton and Lamb.	Veal.	Pork.	Totals.
Anæmia	...	1	...	...	1
Asphyxiation	...	1	1	4	6
Congestion	...	...	...	1	1
Decomposition	...	1	...	1	2
Dropsy	...	4	...	...	4
Emaciation	1	11	...	...	12
Emaciation and Dropsy	...	23	...	...	23
Found Dead	1	12	6	...	19
Hepatitis	...	...	...	3	3
Jaundice	...	1	...	1	2
Johne's Disease	1	...	...	...	1
Peritonitis	...	...	1	1	2
Pleurisy	1	...	...	...	1
Pneumonia	1	...	...	...	1
Prematurity	...	...	2	...	2
Rheumatism	3	...	...	...	3
Septicaemia	...	...	...	1	1
Traumatism	2	...	...	...	2
Tuberculosis	41	...	5	35	81
Totals	45	60	15	47	167

TABLE LXII.

Approximate weight of diseased or unsound meat surrendered at Abattoirs and destroyed by arrangement with the owners :—

	Whole Carcases.	Part Carcases.	Offals.	Totals
	tons. cwt. lbs.	tons. cwt. lbs.	tons. cwt. lbs.	tons. cwt. lbs.
Beef	11 6 42	1 9 88	8 14 22	21 10 40
Veal	9 52	13	3 14	12 79
Mutton and Lamb	16 89	1 25	1 3 80	2 1 82
Pork	2 3 74	6 73	1 15 75	4 5 110
Totals	14 16 33	1 17 87	11 16 79	28 10 87

TABLE LXIII.

Approximate weight of diseased or unsound food surrendered at shops and stores, and destroyed or otherwise dealt with by arrangement with the owners :—

	tons	cwt.	lbs.
Beef, etc.	6	12	43
Veal, etc.			15
Mutton and Lamb, etc.	1	12	6
Pork, etc.	2	16	45
Poultry		1	66
Game			70
Rabbits		6	110
Fish	6	9	6
Provisions	12	19	84
Vegetables	12	2	11
Fruit	5	15	24
Nuts		4	32
Total	49	0	64

In addition to the foregoing, 506 oysters and 130 gallons of milk were destroyed. One forequarter, 1 hindquarter and 4 pieces of beef, and 22 rabbits were condemned and destroyed by Magistrates' Orders.

TABLE LXIV.

Approximate weight of diseased or unsound food destroyed or otherwise dealt with, either by consent of the owners, or by Magistrates' Orders, in each year since 1896 :—

Year.	Food.			Year.	Food.		
	tons.	cwt.	lbs.		tons.	cwt.	lbs.
1896	1	14	88	1905	18	7	108
1897	4	16	72	1906	21	16	77
1898	4	8	73	1907	24	3	84
1899	6	6	93	1908	65	4	54
1900	9	9	49	1909	73	6	12
1901	15	0	96	1910	76	12	8
1902	19	9	107	1911	90	17	80
1903	18	12	46	1912	105	18	70
1904	18	11	54	1913	77	11	39

TABLE LXV.

Number of animals slaughtered and the number and proportion per cent. condemned at the Municipal Slaughter-houses during each of the years 1902 to 1913 :—

Year.	Number of Animals Slaughtered.	Number of Animals Condemned.	Per cent. condemned.
1902	85,046	75	0·09
1903	81,258	77	0·09
1904	85,704	88	0·10
1905	80,558	84	0·10
1906	77,583	108	0·14
1907	79,733	90	0·11
1908	81,496	110	0·13
1909	87,438	117	0·13
1910	81,539	124	0·15
1911	81,898	149	0·18
1912	79,263	174	0·22
1913	74,845	167	0·22

SALE OF FOOD AND DRUGS ACTS.—Samples submitted for analysis during the year 1913 to the Public Analyst, Mr. Thomas Hughes, F.I.C. :—

TABLE LXVI.

Description.	Number Analysed.	Genuine.	Adulterated.
Arrowroot	6	6	...
Baking Powder	3	3	...
Beer	6	6	...
Bread	9	9	...
Butter	126	118	8
Cheese	6	6	...
Chewing Gum	6	6	...
Coffee	18	18	...
Cornflour	3	3	...
Flour	3	3	...
Flour (self-raising)	12	11	1
Ginger	3	3	...
Golden Syrup	3	3	...
Honey	6	6	...
Jam	6	5	1
Lard	30	30	...
Margarine	24	24	...
Milk	510	464	46
Milk (skimmed)	2	2	...
Pepper	9	9	...
Sago	6	6	...
Tea	3	3	...
Totals	800	744	56

TABLE LXVII.

Legal proceedings under the Sale of Food and Drugs Acts :—

No. of Sample.	Description.	Adulteration.	Fines.	Remarks.
36	Milk	13·5% added water	£2 and costs (9/–)	
54	,, ...	5·8% ,, ,, ...	£5 and costs (6/–)	
85	,, ...	10% ,, ,, ...	£5 and costs (11/6)	
96	,, ...	4·3% ,, ,, ...	£5 and costs (5/6)	
129	,, ...	11·4% ,, ,, ...	£2 and costs (6/6)	
131	,, ...	20·3 deficient fat ...	£2	Including costs
140	Butter	100% margarine ...	5/– and costs (6/–)	
164	Milk	9·3% deficient fat		Dismissed—warranty
259	,, ...	13·7% ,, ,, ...	To pay costs (8/6) ...	
295	,, ...	2·6% added water	5/– and costs (5/6) ...	
344	,, ...	4% deficient fat		Dismissed
381	,, ...	12% ,, ,, ...	To pay costs (11/6)	
464	,, ...	3% ,, ,, ...		Dismissed
465	,, ...	3·7% ,, ,, ...		Dismissed
467	,, ...	8·7% ,, ,, ...	To pay costs (9/–) ...	
470	,, ...	6% ,, ,, ...	To pay costs (12/6)	
472	,, ...	8·3% ,, ,, ...	To pay costs (9/–) ...	
473	,, ...	3·7% ,, ,, ...		Dismissed
476	,, ...	12% ,, ,, ...		Dismissed
478	,, ...	3% ,, ,, ...		Withdrawn
483	,, ...	5% ,, ,, ...		Dismissed—warranty
486	,, ...	4·3% ,, ,, ...	£2 and costs (5/–) ...	
517	,, ...	3% ,, ,, ...	£2 and costs (9/–)	
547	,, ...	2·7% ,, ,, ...	To pay costs (14/6)	
601	,, ...	5·8% added water	10/- and costs (5/6)...	
647	,, ...	4·7% deficient fat		Dismissed
729	,, ...	8·3% ,, ,, ...		Dismissed—warranty
811	Butter	100% margarine ...	£1 and costs (9/–)	
849	Milk	6·2% added water	£10 and costs (15/–)	

TABLE LXVIII.

In the following cases legal proceedings were not taken :—

No. of Sample.	Description.	Adulteration.	Remarks.
41	Milk	1·8% added water	
57	,, ...	0·25 grain of sodium nitrite per pint of milk	
99	,, ...	1·7% added water	
105	Butter	100% margarine	Informal sample
113	,, ...	100% ,, ...	,, ,,
115	,, ...	100% ,, ...	,, ,,
157	Milk	1% deficient fat	
170	,, ...	3·4 added water	

TABLE LXVIII.—con.

No. of Sample.	Description.	Adulteration.	Remarks.
183	Milk	2·9% added water	
204	,, ...	1% ,, ,,	
207	,, ...	1·7% deficient fat	
232	,, ...	1·7% added water	
249	,, ...	1% ,, ,,	
260	,, ...	1% deficient fat	
270	,, ...	8·7% ,, ,, ...	Disclosure made to Inspector
288	Self-raising flour	0·4% of calcium sulphate in excess of maximum amount necessary ...	Legal proceedings not recommended
292	Milk	Under 0·001% boric acid	
325	,, ...	1% added water	
342	,, ...	1% deficient fat	
348	,, ...	2% ,, ,,	
430	Butter	0·4% water in excess of standard ...	Informal sample
450	,, ...	3·7% ,, ,, ,, ...	,, ,,
480	Milk	1·7% deficient fat	
519	,, ...	1·7% ,, ,,	
589	,, ...	4·7% ,, ,, ...	Informal sample
712	Jam	0·0025% salicylic acid	Legal proceedings not recommended
800	Butter	100% margarine	Informal sample

Legal proceedings are not taken in cases of milk in which the percentage of adulteration is very small.

TABLE LXIX.

Other legal proceedings under the Sale of Food and Drugs Acts :—

Offence.	Fines.	Remarks.
False warranty *re* milk (Sample No. 164) ...	...	Dismissed
False warranty *re* milk (Sample No. 483) ...	...	Dismissed
False warranty *re* milk (Sample No. 729) ...	£20 and costs (18/6)	
Margarine exposed for sale not being labelled	...	Withdrawn
Margarine sold in wrapper not being labelled	...	Withdrawn

TABLE LXX.

Samples of milk analysed and proportion adulterated :—

	Samples Analysed.	Samples Adulterated.					
		Number.	Percentage.	Added Water	Deficient Fat.	Added Water and Deficient Fat.	Preservatives
Wholesale –							
Taken at Railway Stations	210	15	7·1	2	13	...	...
Retail—							
Taken in shops, from carts, etc. ...	302	31	10·2	14	15	...	2
Totals	512	46	8·9	16	28	...	2

FACTORY AND WORKSHOP ACT, 1901.—Under Section 132 of the Factory and Workshop Act, 1901, the Medical Officer of Health is required in his annual report to deal specifically with the administration of the Act (so far as the matters under the charge of the Sanitary Authority are concerned), and to send a copy of this report to the Secretary of State.

" Factories " include all places in which mechanical power is used in aid of the manufacturing processes, and certain other industries specified in Part I. of Schedule VI. to the Act, whether mechanical power is used or not. The duty devolving upon the Health Department in connection with factories is confined to the enforcement of Section 22 of the Public Health Acts Amendment Act, 1890, relating to the provision of suitable and sufficient sanitary conveniences. The inspections of factories referred to in the tables were in connection with this duty. The Workshop Inspectors made 792 inspections of factories during the year, and 43 notices were served.

" Workshops " include premises (not being factories) in which manual labour is exercised by way of trade or for purposes of gain in, or incidental to, the making, altering, repairing, finishing, or adapting for sale any article, and to or over which the employer of the persons working there has the right of access or control. The inspections of such premises during the year amounted to 3,349. The number of notices served in cases where sanitary defects were found was 321.

" Workplaces," although not defined in the Act, include any place where work is done permanently, and where people assemble together to do work permanently of some kind or another, such as stables, kitchens of restaurants, &c. The number of inspections of such places made during the year amounted to 655, and 62 notices were served.

Underground bakehouses are dealt with by special provisions of the Factory and Workshop Act, 1901. It is provided in Section 101 of the Act, that no underground bakehouse shall be used as such unless it was so used at the time of the passing of the Act, and that after the 1st January, 1904, no underground bakehouse (whenever established) may be used unless the Sanitary Authority is satisfied that it is suitable for the purpose in all respects, and has granted a certificate of suitability. A bakehouse is deemed to be an underground bakehouse if any room used for baking, or for any purpose incidental thereto, is so situate that the surface of the floor is more than three feet below the surface of the footway of the adjoining street or of the ground adjoining or nearest to the room. There are four underground bakehouses in Cardiff for which certificates have been granted, three only being in use at the end of last year.

One hundred and seventeen lists of outworkers were received, giving the names and addresses of 216 work-people engaged in home work, and 427 inspections were made of outworkers'

premises. In 41 instances sanitary defects were discovered, and notices were served in these cases. Great importance is attached to the inspection of places in which these outworkers are engaged, the object being to prevent unwholesome conditions or nuisances injurious to the health of the workers. Sections 107–115 of the Act of 1901 give power to the Local Authority to prohibit work being done by outworkers (1) in dwellings which are injurious or dangerous to the health of the workers themselves, *e.g.*, through overcrowding, want of ventilation, or other insanitary conditions, and (2) in premises where there is dangerous infectious disease. Nuisances found upon these premises were abated in the ordinary way under the provisions of the Public Health Acts and Sanitary Byelaws. In one instance infectious disease was found upon the premises of an outworker, and an order was made prohibiting the occupier of the workshop from giving out work to the person living upon the infected premises until certified to be free from infection.

The Inspectors of Workshops made altogether 5,224 visits of inspection to factories, workshops, &c., during the year. 467 notices regarding nuisances or sanitary defects were served, and 468 notices were complied with. Details of the work carried out under the Act are set forth in Tables LXXI. to LXXIII. in this Report.

The following statement is prepared by request of the Secretary of State.

TABLE LXXI.

1.—Inspection of Factories, Workshops and Workplaces.

Premises.	Number of		
	Inspections	Written Notices.	Prosecutions.
Factories (including Factory Laundries)	792	43	—
Workshops (including Workshop Laundries)	3,349	321	—
Workplaces (other than Outworkers' premises included in Part 3 of this Report)	656	62	—
Total	4,797	426	—

2.—Defects Found in Factories, Workshops and Workplaces.

Particulars.	Number of Defects	
	Found.	Remedied.
Nuisances under the Public Health Acts :—		
Want of cleanliness	107	100
Want of ventilation	11	12
Overcrowding	1	1
Want of drainage of floors	1	2
Other nuisances	320	331
Sanitary accommodation ... insufficient	14	5
Sanitary accommodation ... unsuitable or defective ...	64	66
Sanitary accommodation ... not separate for sexes ...	5	7
Breach of special sanitary requirements for bakehouses (Sec. 97 to 100)	65	65
Total	588	589

In the foregoing table, where the number of defects remedied exceed those found, the defects were found in 1912 and remedied in 1913.

TABLE LXXI.—con.

3.—Home Work.

Nature of Work.	Outworkers' Lists, Section 107.							Outwork in Unwholesome Premises, Section 108.		Outwork in Infected Premises, sections 109, 110	
	Lists received from Employers						Notices served on Employers as to keeping or sending lists.	Instances.	Notices served.	Instances.	Orders made (S. 110).
	Sending twice in the year.			Sending once in the year.							
	Lists.	Outworkers		Lists.	Outworkers.						
		Contractors	Workmen.		Contractors	Workmen.					
Wearing Apparel—											
(1) making, &c. ...	102	...	324	15	...	28	91	41	41	1	1
(2) cleaning & washing	...	...	...	...	...	...	...	...	...	...	...

4.—Registered Workshops.

Workshops on the Register (S. 131) at the end of the Year.	Number.
Bakers	165
Bootmakers	185
Dressmakers and Milliners	244
Laundries	38
Tailors	96
Miscellaneous	528
Total number of Workshops on Register ...	1,256

5.—Other Matters.

Class.	Number.
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (Sec. 133) ...	13
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts but not under the Factory Act :—	
Notified by H.M. Inspector	46
Reports (of action taken) sent to H.M. Inspector	40
Other (Notices of Occupation of Workshops received from H.M. Inspector) ...	133
Underground Bakehouses in use at the end of the year	3

TABLE LXXII.

Factories and workshops on the registers at the end of the year 1913, the number of inspections made, and the number of notices served during the year :—

	Number on Registers.	Number of Inspections.	Number of Notices Served.
WORKSHOPS :—			
Bakers	165	1,010	96
Bootmakers	137	336	32
Dressmakers and Milliners	200	258	17
Laundries	32	209	31
Tailors	80	218	26
Miscellaneous	495	1,012	92
DOMESTIC WORKSHOPS :—			
Bootmakers	48	128	13
Dressmakers and Milliners	44	45	3
Laundries	6	4	...
Tailors	16	13	2
Miscellaneous	33	106	9
WORKPLACES :—			
Miscellaneous	321	666	62
OUTWORKERS' PREMISES :—			
Tailors	232	410	38
Miscellaneous	16	17	3
FACTORIES :—			
Bakers	23	117	6
Bootmakers	18	24	2
Laundries	20	55	8
Miscellaneous	401	596	27
Totals	2,287	5,224	467

TABLE LXXIII.

Nuisances in Factories, Workshops, &c. during the Year 1913.

Nuisances.	Bakehouses.		Bootmakers' Premises.		Dressmakers' and Milliners' Premises.		Laundries.		Tailors' Premises.		Outworkers' Premises.		Miscellaneous.		Totals.	
	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied	Found	Remedied
Want of cleanliness	65	65	14	14	3	4	18	17	15	13	7	7	57	52	179	172
Want of ventilation	...	...	3	2	1	1	...	2	5	4	2	3	2	3	13	15
Overcrowding	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1
Want of drainage of floors	1	1	...	...	...	...	...	...	...	...	...	...	...	1	1	2
Sanitary Accommodation — Insufficient ...	...	...	...	...	...	...	...	...	1	...	...	...	13	5	14	5
Sanitary Accommodation — Unsuitable or defective ...	5	4	6	6	4	6	3	2	2	2	7	7	44	46	71	73
Sanitary Accommodation — Not separate for sexes ...	1	1	...	...	...	...	1	1	...	1	1	...	3	4	6	7
Defective or choked drains	9	10	9	8	3	2	2	2	2	4	5	6	19	20	49	52
Defective syphon traps	...	...	...	...	...	...	...	...	...	...	1	1	1	1	2	2
Defective gully traps	3	5	...	...	...	...	1	1	...	...	...	...	6	9	10	15
Want of flushing apparatus	...	...	1	1	...	...	...	...	...	...	...	...	4	3	5	4
Defective flushing apparatus	6	4	3	2	3	3	7	7	4	5	3	2	24	24	50	47
Defective yard surfaces	6	8	8	5	1	1	...	...	...	1	4	4	6	6	25	25
Offensive accumulations	11	12	...	...	...	1	4	3	...	...	2	2	17	17	34	35
Want of manure receptacles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Defective manure receptacles ...	2	1	...	...	...	...	...	...	...	...	...	...	4	5	6	6
Other nuisances	18	20	30	32	13	12	13	13	16	20	19	20	64	63	173	180
Totals	127	131	74	70	29	31	49	48	45	50	51	52	264	259	639	641

SHOPS ACTS, 1912 and 1913.—The Shops Act, 1912, which came into operation on 1st May, 1912, repealed the Shops Regulation Acts, 1892–1911. It reproduces without change of substance the provisions of previous Acts dealing with shops, from the Shop Hours Act, 1892, down to and including the Shops Act, 1911. Amongst other provisions, the Act provides that every shop-assistant must be allowed a half-holiday, and must be given intervals for meals and rest. The hours of employment of young persons under 18 years of age are regulated under the Act. Provision is also made requiring employers to provide seats for female shop-assistants. Shop-keepers are required to close their shops at 1 p.m. on one week-day in every week, unless it is exempted on one of the grounds mentioned in the Act. The local authority have power to make an Order for any class of shop with the consent of the occupiers of two-thirds of the shops of the class, fixing the hour on each day of the week (other than the half-holiday) at which the shops are to close ; the hour fixed must not be earlier than 7 p.m. Such Closing Orders cannot, however, apply to certain classes of business which are exempt. The Shops Act, 1913, alters the provisions of the Act of 1912 with reference to the meal times and half-holidays of assistants employed in the sale of refreshments, without reducing the time to be set apart for such meal times and half-holidays.

TABLE LXXIV.

Closing Orders fixing the closing time of shops in operation in Cardiff, and number of inspections and infringements thereunder during the year 1913 :—

No. of Order	Trade	Area.	Inspections	Infringements.
1	Barbers	Whole City	367	8
2	Bootmakers	Grangetown	35	...
3	Bootsellers	Central Area	117	3
4	,, ...	Roath, Cathays & Park ...	305	...
5	,, ...	Riverside and Canton ...	56	...
6	Goldsmiths, etc.	Central Area	100	1
7	Pawnbrokers	,, ,, ...	4	...
8	Goldsmiths, Pawnbrokers, etc. ...	Whole of City, except Central	177	3
9	General and Fancy Drapers, Milliners, etc.	East of Taff Vale and Rhymney Railways ...	231	1
10	Toys or Fancy Goods	Central Area	54	1
11	Pharmacists, Chemists and Druggists	Whole of City, except South	260	2
12	Ironmongers, Iron and Steel Sellers, etc.	Park Ward	50	...
13	Hay, Corn, Seed Merchants, etc. ...	Whole City	...	...
		Totals ...	1,756	19

Other inspections and infringements under the Shops Act, 1912, during the year 1913 :—

Number of shops visited	6,883
Number of observations of shops	4,555
Infringements with reference to :—	
Assistants' meal times	1
Assistants' half-holiday	433
Employment of young persons	218
Seats for female shop-assistants	1
Closing of shops for weekly half-holiday	648

Most of the above infringements were in connection with notices which shop-keepers are required to affix in the interior and on the exterior of their shops.

Altogether legal proceedings were taken in 34 cases. The number of defendants fined was 4 ; 21 were cautioned, 6 had to pay costs only, and 3 cases were dismissed. The fines amounted to £1 10s. and costs.

SANITARY INSPECTION OF DISTRICT.—The general sanitary inspection of the district, inspection of factories and workshops, inspection of shops under the Shops Acts, inspection of seamen's and common lodging houses, the inspection of meat and other food in shops and stores, and the taking of samples for analysis under the Sale of Food and Drugs Acts, were carried out during the year 1913 by Mr. S. Evans, Chief Inspector of Nuisances, with the assistance of fourteen Assistant Inspectors.

For the purposes of inspection, the city is divided into six districts, as follows :—

District No. 1—Canton and Riverside Wards.
,, No. 2—Splott Ward and part of Adamsdown Ward.
,, No. 3—Park Ward and part of Cathays Ward.
,, No. 4—Central Ward and parts of Cathays and South Wards.
,, No. 5—Grangetown Ward and part of South Ward.
,, No. 6—Roath Ward and part of Adamsdown Ward.

The following statement, in addition to other tables in this report, shows the nature and extent of the work performed by the Chief Inspector and his Assistants.

SUMMARY OF SANITARY INSPECTION OF DWELLING HOUSES, &c., DURING THE YEAR 1913 :—

Complaints of nuisances received	791
Houses, etc., inspected	6,379
House-to-house-inspections (including testing of drains)	2,250*
Re-inspections of houses, etc.	19,723
Drains tested with smoke	531
,, ,, chemicals	1,174
Notices served :—	
Informal	3,059*
Statutory	53*
Notices complied with :—	
Informal	3,130*
Statutory	76*
Towns Improvement Clauses Act, 1847 :—	
Notices *re* defective shutes served	604
,, ,, ,, complied with	579

* Including inspections and notices referred to in Table 1., pages 11 and 12.

In connection with the sanitary inspection of dwelling houses, 5,886 sanitary defects were remedied, details of which are given below :—

W.C. accommodation provided	1
Drains unchoked and repaired	975
Soil pipes, ventilation shafts and fresh air inlets repaired	42
New W.C. pans provided	118
New syphon traps provided	11
New gully traps provided	30
W.C.s repaired	153
W.C.s cleansed	150
Flushing apparatus provided	10
,, ,, repaired	35
Trough outlets repaired	105
Roofs repaired	803
Shutes repaired	616
Down-pipes repaired	109
Chimneys repaired	49
Inside plastering repaired	257
Outside ,, ,, ...	197

Areas repaired	29
Yard surfaces repaired	455
Yards, &c., cleansed	24
Outhouses cleansed or repaired	48
Accumulations removed	151
Manure receptacles provided	2
,, ,, repaired	2
Boundary and party walls repaired	37
Doors repaired	50
Floors repaired	310
Windows repaired	439
Ceilings repaired	91
Houses, bedding, &c., cleansed	134
Ventilation improved	10
Water supply provided	25
Overcrowding abated	87
Other nuisances abated	331

Particulars as to the inspection of premises periodically inspected during the year 1913 are herewith given :—

OFFENSIVE TRADES :—

Number on Register	39
Inspections	363
Notices served	3
Notices complied with	2

DAIRIES, COWSHEDS AND MILKSHOPS :—

Milkshops on Register	366
Cowsheds on Register	9
Inspection of milkshops	2,812
,, cowsheds	182
Notices served	83
Notices complied with	75

SHOPS, STORES, &c. :—

Inspections of butchers' shops	1,376
,, ,, provision shops	220
,, ,, markets	584
,, ,, wholesale stores...	1,826
,, ,, fish and fruit shops	165
,, ,, storage premises	1,028

MISCELLANEOUS INSPECTIONS :—

Public houses	533
Notices served	66
Notices complied with	49
Theatres, &c.	184
Notices served	11
Notices complied with	13
Fried-fish shops	574
Notices served	30
Notices complied with	33
Ice-cream shops	780
Notices served	20
Notices complied with	18
Inspections of urinals...	273
Smoke observations	58
Visits to owners *re* notices	609

COMMON LODGING HOUSES :—

Common Lodging Houses on Register	30
Day inspections	2,021
Night inspections	31
Notices served	95
Notices complied with	92

SEAMEN'S LODGING HOUSES :—

Seamen's Lodging Houses on Register	155
Licences granted	178
Licences relinquished	23
Day inspections	5,472
Night inspections	89
Notices served under Byelaws	336
Notices under Byelaws complied with	301
Notices served under Public Health Acts	92
Notices under Public Health Acts complied with...	90
Persons cautioned for lodging seamen without being licensed ...	43
Legal proceedings for lodging seamen without being licensed ..	4

One person was fined 7/6 and costs, one was cautioned, and in two instances the cases were adjourned for three months and withdrawn.

TABLE LXXV.

SUMMARY OF LEGAL PROCEEDINGS.

Proceedings taken under	Number	Fined	Cautioned	To pay Costs only	Dismissed	Withdrawn	Amount of Fines
Sale of Food and Drugs Acts ...	33	13	2	6	11	1	£47 and costs
Shop Hours Acts	34	4	21	6	3	...	£1 10s. and costs
Public Health Act, 1875, Sec. 95 ...	6	1	...	...	...	5	£2 and costs
Public Health Act, 1875, Sec. 117 ...	9	9	...	...	...	...	£35 and costs
Public Health Acts (Amendment) Act, 1907, Sec. 70	2	...	1	...	...	1	...
Merchant Shipping Act, 1894, Sec. 214 (5)—Order in Council ...	4	1	1	...	...	2	7/6 and costs
Cardiff Sanitary Byelaws (5 & 13) ...	4	2	...	...	...	2	£2 and costs
Regulations with respect to Dairies, Cowsheds and Milkshops ...	1	1	...	...	...	...	£3 and costs
Totals ...	93	31	25	12	14	11	£90 17s. 6d. & costs

DISINFECTING STATION, CLEANSING STATION, and MORTUARY.—The new Disinfecting and Cleansing Station was completed and opened in June last year. The Station is situated on land adjacent to the Mortuary.

The accommodation of the Cleansing Department comprises separate baths and rooms for males and females. Each side contains a bath-room, waiting-room and dressing-room, with all the necessary appliances.

The Cleansing of Persons Act, 1897, permits Sanitary Authorities to provide Cleansing Stations and apparatus for cleansing verminous persons and their garments free of charge, upon

the application of such persons. The Children Act provides that where the Sanitary Authority has made this provision, the Education Authority may avail themselves of it for enforcing the requirement as to the compulsory cleansing of verminous school children.

The cleansing of school children, when necessary, is done by School Nurses. During November and December last the number of children cleansed at the Cleansing Station amounted to 15; of these, 12 were verminous and three suffered from scabies. In all cases the children's bedding and clothes were disinfected, and the rooms occupied by them were also cleansed and disinfected by the Disinfectors.

Infected premises are disinfected either by fumigation with sulphur dioxide, formaldehyde, or by means of a spray of formalin. Articles of clothing and bedding are removed from the house in which the infectious disease occurred to the Disinfecting Station, and submitted to disinfection by saturated steam in a Washington Lyon's high pressure steam disinfecting apparatus.

During the year the routine disinfection comprised the following :—

Houses disinfected	1,563
School class-rooms disinfected	7
Articles of bedding, clothing, etc., disinfected	10,331
,, ,, ,, ,, destroyed	342

The number of bodies removed to the Mortuary during the year was 77 (64 males and 13 females). The number of post-mortem examinations performed was 30.

CARDIFF METEOROLOGICAL STATION.—The Cardiff Meteorological Station is situated on land belonging to the Corporation (Waterworks Department) at Penylan.

The geographical position of the Station is Latitude 51° 30′ N., Longitude 3° 10′ W., and the height of the Station above mean sea level is 203 feet.

The Meteorological Station is under the control of the Medical Officer of Health. Observations are made at 9 a.m., and 9 p.m.—at 9 a.m. by Mr. F. Glover, of the Medical Officer of Health's Department, and at 9 p.m. by Mr. W. J. Mellings, caretaker of the Penylan Waterworks and Public Telescope.

The Station is recognised by the Meteorological Office, London, as a Station of the Second Order, and is periodically inspected by an Inspector from that Office, who has on each occasion reported favourably upon the arrangements, and upon the way in which the observations are taken and the records kept.

The instruments in use have been verified at the Kew Observatory, and the necessary instrumental corrections are duly made.

Weekly and monthly reports on the weather are sent to the Meteorological Office, London, which are included in the Weekly and Monthly Weather Reports issued by that Office.

The averages with which the monthly rainfall and mean temperature are compared are those for the twenty-four years 1889–1912, and the sums following the signs + and — in the following tables show respectively the difference from the average, either above or below.

TABLE LXXVI.

BAROMETRIC PRESSURE AND RELATIVE HUMIDITY.

1913	Mean Barometric Pressure*		Hygrometer*		
	Uncorrected	At M S L. and 32°F.	Dry-bulb (mean)	Wet-bulb (mean)	Mean Relative Humidity
	in.	in.	°F.	°F.	%
January	29·546	29·740	41·5	40·5	92
February	29·939	30·157	39·2	38·0	90
March	29·640	29·847	43·6	41·2	82
April	29·642	29·843	46·5	43·9	81
May	29·726	29·911	52·0	49·1	80
June	29·942	30·110	55·9	52·7	80
July	29·930	30.090	59·2	55·3	76
August	29·916	30·071	60·6	56·8	77
September	29·811	29·974	56·7	54·4	85
October	29·662	29·838	52·3	50·3	86
November	29·716	29·910	47·3	45·8	88
December	29·938	30·147	41·7	39·9	86
Means	29·784	29·970	49·7	47·3	83

* From observations at 9 a.m. and 9 p.m.

TABLE LXXVII.

TEMPERATURE.

1913	Maximum	Minimum	Mean of Maximum	Mean of Minimum	Mean Temperature	Difference from Average (24 years)
	°F.	°F.	°F.	°F.	°F.	°F.
January	51	27	45·9	37·0	41·5	+ 2·9
February	53	23	45·7	35·0	40·3	+ 0·3
March	55	28	49·9	37·0	43·5	+ 1·1
April	67	34	52·6	40·6	46·6	+ 0·4
May	78	38	60·6	45·1	52·8	+ 0·4
June	78	42	65·2	49·1	57·1	— 0·2
July	76	48	67·7	52·7	60·2	— 0·5
August	79	45	69·5	53·6	61·5	+ 1·4
September	75	45	63·8	52·3	58·0	+ 1·8
October	64	38	58·8	47·7	53·2	+ 3·2
November	58	34	53·0	42·1	47·5	+ 3·3
December	52	27	45·9	38·1	42·0	+ 1·2
	Max.	Min.	Mean	Mean	Mean	
	79	23	56·5	44·2	50·3	+ 1·2

TABLE LXXVIII.

SOLAR AND TERRESTRIAL RADIATION, UNDERGROUND TEMPERATURE, AND SUNSHINE.

1913	Temperature				Bright Sunshine	Bright Sunshine; difference from Average (5 years)
	Solar Maximum (Mean)	Grass Minimum (Mean)	Underground (Mean)			
			1 ft.	4 ft.		
	°F.	°F.	°F.	°F.	hrs.	
January	62·4	33·5	42·0	45·3	35·4	— 26·5
February	74·5	30·9	40·4	43·9	66·9	— 18·9
March	90·5	32·7	43·2	44·0	122·7	+ 12·6
April	96·1	36·7	46·9	46·0	119·3	— 53·8
May	112·2	40·3	53·6	49·6	204·6	— 24·6
June	121·6	44·1	59·7	55·1	241·6	+ 38·6
July	116·1	48·3	61·6	57·8	176·4	— 43·2
August	115·0	49·1	61·8	59·2	167·4	— 25·6
September	103·9	48·9	58·2	58·1	115·5	— 34·5
October	97·5	42·8	54·1	56·1	107·8	+ 9·1
November	79·4	38·7	47·8	51·8	62·4	— 6·0
December	62·9	34·4	43·6	48·5	59·9	+ 12·7
	Mean 94·3	Mean 40·0	Mean 51·1	Mean 51·3	Total 1479·9	— 170·1

TABLE LXXIX.

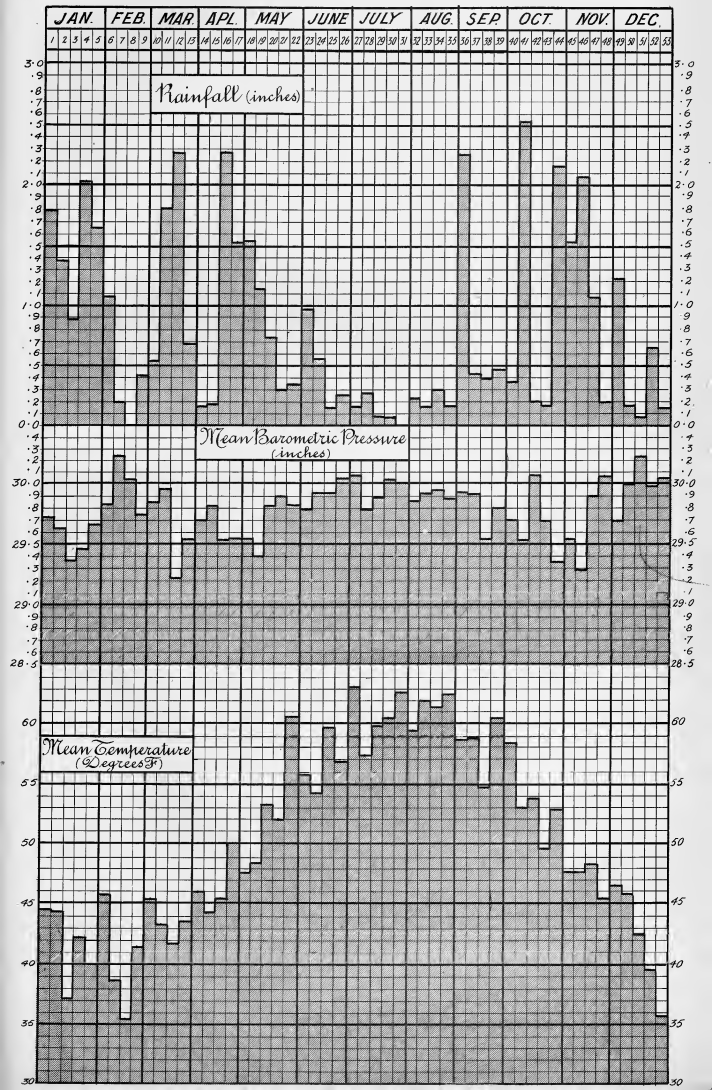
RAINFALL.

1913	Amount	Difference from Average (24 years)	* Greatest Fall in 24 hours	* Date of Greatest Fall	* No. of days with Rain (0·01 in. or more)
	ins.	ins.	ins.		
January	7·26	+ 3·79	1·35	4th	24
February	1·46	— 1·31	·50	7th	13
March	5·75	+ 2·79	1·01	22nd	22
April	5·21	+ 2·57	1·62	15th	17
May	2·84	+ 0·62	·41	11th	17
June	1·93	— 0·94	·50	9th	11
July	0·60	— 1·92	·28	6th	8
August	0·97	— 3·32	·24	9th	13
September	3·50	+ 0·88	1·70	4th	12
October	5·10	+ 0·28	·90	10th & 30th	17
November	5·36	+ 1·86	·82	11th	23
December	2·08	— 2·65	·50	6th	16
	Total 42·06	+ 2·62	1·70	4th Sept.	Total 193

* 24 hours ending 9 a.m. next day.

Diagram I.

SHOWING RAINFALL, MEAN BAROMETRIC PRESSURE AND MEAN TEMPERATURE RECORDED AT THE METEOROLOGICAL STATION, PENYLAN, CARDIFF, IN EACH WEEK DURING THE YEAR 1913



CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.—The Laboratory forms part of the buildings of the University College, Cardiff, and is used for teaching purposes in connection with the Public Health Department of the College. It is maintained jointly by the Cardiff Corporation and the Glamorgan County Council, and the Medical Officers of these authorities act as Directors of the Laboratory, having the use of it for bacteriological and chemical investigations connected with their administrative work. The Laboratory is under the immediate supervision of the Chemist and Bacteriologist, Mr. J. H. Sugden, M.Sc., F.I.C., and Alex. Brownlee, F.R.C.S. (Edin.), D.P.H., is the assistant Chemist and Bacteriologist.

The following statement shows the work carried out for Cardiff during the year 1913 :—

Bacteriological Examinations :—		
Suspected Diphtheria	436	
Suspected Typhoid Fever	70	
Sputa for Tubercle Bacilli	383	
Milks ,, ,, ,, ...	42	
Urines ,, ,, ,, ...	3	
Rodents for Plague	20	
Anthrax	2	
Diseased Meat	1	
		957
Chemical Examinations :—		
Milks and Milk Products	31	
Stains on Linen Cloth	1	
		32
Drinking Waters :—		
Chemical Analyses	60	
Bacteriological Examinations	108	
		168
Total ...		1,157

The specimens for suspected diphtheria, typhoid fever, and tuberculosis submitted for examination from Cardiff, together with the results of such examinations, are shown below :—

Nature of Examination.	Positive Results.	Negative Results.	Total.	Percentage of Positive Results.
Suspected Diphtheria ...	132	304	436	30·3
,, Typhoid Fever ...	19	51	70	27·1
,, Tuberculosis ...	95	288	383	24·8

Mixed milks from Cardiff examined for Tubercle Bacilli :—

Number examined	30
Positive	1
Negative	29
Percentage of positive results	3·3

Although the samples were all from milk supplies serving the city, the original sources of the milk were in most cases outside Cardiff.

Bacteriological examinations were made of 79 samples of drinking water from ships, submitted by the Cardiff Port Sanitary Authority, with the following results :—

Contaminated	18
Doubtful Purity	15
Satisfactory	46

Samples of water from the various Cardiff reservoirs and filter beds were examined at frequent intervals, both bacteriologically and chemically, with the object of controlling the purity of the water supply at its sources, during transit, and in the service, in addition to testing the efficiency of the various filter beds. Samples of sand, deposit, and other material associated with the public water supply have also been examined. The action of the filtered water upon various metals has been tested and reported upon. During the year a large number of tests were made in order to determine, if any, the amount of the plumbo-erosive and plumbo-solvent action of the water at high and low temperatures, and under other varying conditions.

I have the honour to be,

My Lord Mayor and Gentlemen,

Your obedient Servant,

EDWARD WALFORD,

Medical Officer of Health.

APPENDIX.

CITY OF CARDIFF.

LOCAL GOVERNMENT BOARD TABLES. TABLE I.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1913 AND PREVIOUS YEARS.

Year.	Population estimated to Middle of each Year.	Births.			Total Deaths Registered in the District.		Transferable Deaths.		Nett Deaths belonging to the District.			
		Uncorrected Number.	Nett.				of Non-residents registered in the District.	of Resident's not registered in the District.	Under 1 Year of Age.		At all Ages.	
			Number.	Rate.	Number.	Rate.			Number.	Rate per 1,000 Nett Births.	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1908	177,143	5,172	5,172	29·2	2,610	14·7	136	64	644	124	2,538	14·3
1909	178,987	5,026	5,026	28·0	2,619	14·6	156	86	518	103	2,549	14·2
1910	180,849	4,822	4,822	26·6	2,454	13·5	165	67	537	111	2,356	13·0
1911	182,729	4,744	4,730	25·8	2,671	14·6	189	112	639	135	2,594	14·1
1912	184,633	4,612	4,597	24·9	2,620	14·2	166	109	509	110	2,563	13·9
1913	186,554	4,912	4,900	26·2	2,618	14·0	181	130	566	115	2,567	13·7

This Table is arranged to show the gross births and deaths in the district, and the births and deaths properly belonging to it with the corresponding rates. The rates are calculated per 1,000 of the estimated population.

In Column 6 are included the whole of the deaths registered during the year as having actually occurred within the district.

In Column 12 is entered the number in Column 6, corrected by subtraction of the number in Column 8, and by addition of the number in Column 9. Deaths in Column 10 are similarly corrected by subtraction of the deaths under 1, included in the number given in Column 8, and by addition of the deaths under 1 included in the number given in Column 9.

"Transferable Deaths" are deaths of persons who, having a fixed or usual residence in England or Wales, die in a district other than that in which they resided.

Total population at all ages	182,259	At Census 1911.
Number of inhabited houses	31,127	
Average number of persons per house	5·8	
Area of District in acres (land and inland water) ...	6,373	

TABLE II.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1913.

NOTIFIABLE DISEASE.	Number of Cases Notified.								Total Cases Notified in each Locality.			Total Cases Removed to Hospital.
	At all Ages.	At Ages—Years.							East Cardiff Regis. Sub-Dist.	Central Cardiff Regis. Sub-Dist.	West Cardiff Regis. Sub-Dist.	
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards.				
Small-pox	3	...	...	...	...	1	2	...	...	...	3	3
Cholera, Plague...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (including Membranous Croup)	558	3	118	344	56	33	4	...	189	110	259	379
Erysipelas	145	5	4	10	14	57	47	8	38	51	56	...
Scarlet Fever	902	4	249	578	44	27	...	...	193	262	447	705
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	27	...	...	2	14	10	1	...	4	14	9	18
Relapsing Fever, Continued Fever ...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	8	...	...	...	4	4	...	...	1	7	...	...
Cerebro-spinal Meningitis	1	1	...	...	...	...	...	...	1	...	...	...
Poliomyelitis	4	1	2	1	...	...	...	...	3	1	...	...
Pulmonary Tuberculosis	520	3	6	58	133	219	91	10	169	205	146	127*
Other forms of Tuberculosis	166	11	22	65	38	25	3	2	53	61	52	3*
Totals	2,334	28	401	1,058	303	376	148	20	651	711	972	1,235

* Number of notifications on Form C under The Public Health (Tuberculosis) Regulations, 1912.

TABLE III.

CAUSES OF AND AGES AT DEATH DURING THE YEAR 1913.

Causes of Death.	Nett Deaths at the subjoined ages of "Residents" whether occurring within or without the District.									Total Deaths whether of "Residents" or "Non-Residents" in Institutions in the District.
	ALL AGES.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and upwards.	
1	2	3	4	5	6	7	8	9	10	11
All causes { Certified	2,567	566	102	93	104	134	368	601	599	581
All causes { Uncertified	...	...	...	...	...	...	...	...	...	...
Enteric Fever	6	...	...	...	...	1	4	1	...	5
Small-pox	...	...	...	...	...	...	...	...	...	...
Measles	11	2	7	1	1	...	...	...	...	...
Scarlet Fever	17	1	3	9	4	...	...	...	...	12
Whooping Cough ...	17	9	5	3	...	...	...	...	...	...
Diphtheria and Croup ...	41	1	4	17	17	2	...	...	...	24
Influenza	16	3	...	1	...	...	3	5	4	1
Erysipelas	2	1	...	...	...	...	...	1	...	1
Phthisis (Pulmonary Tuberculosis) ...	233	2	2	1	14	46	103	59	6	58
Tuberculous Meningitis ...	25	2	3	6	7	3	4	...	...	4
Other Tuberculous Diseases	44	16	6	3	3	7	7	2	...	14
Cancer, malignant disease	158	...	...	...	...	...	30	79	49	51
Rheumatic Fever ...	17	...	...	...	6	7	2	...	2	...
Meningitis	25	9	3	6	5	...	1	1	...	1
Organic Heart Disease ...	210	3	...	2	7	7	28	92	71	38
Bronchitis	195	40	7	3	...	1	8	38	98	53
Pneumonia (all forms) ...	151	38	15	11	6	9	26	33	13	24
Other diseases of Respiratory organs ...	42	1	2	1	1	...	7	17	13	6
Diarrhœa and Enteritis ...	166	125	25	2	...	1	4	2	7	4
Appendicitis and Typhlitis	15	...	...	...	2	8	3	1	1	19
Cirrhosis of Liver ...	24	...	...	...	...	...	4	14	6	7
Alcoholism	5	...	...	...	...	...	2	2	1	...
Nephritis and Bright's Disease	63	1	...	1	...	6	13	28	14	9
Puerperal Fever ...	2	...	...	...	...	1	1	...	...	...
Other accidents and diseases of Pregnancy and Parturition ...	15	...	...	...	...	4	11	...	...	5
Congenital Debility and Malformation, including Premature Birth ...	202	201	1	...	...	...	...	...	...	16
Violent Deaths, excluding Suicide	127	4	4	12	15	15	22	33	22	69
Suicide	12	...	...	...	...	3	4	5	...	2
Other Defined Diseases ...	709	102	15	14	15	13	78	181	291	156
Diseases ill-defined or unknown	17	5	...	...	1	...	3	7	1	2
Totals	2,567	566	102	93	104	134	368	601	599	581
Sub-entries (included in above figures)—										
Cerebro-spinal Meningitis	1	1	...	...	...	...	...	...	...	...
Poliomyelitis	2	1	...	...	1	...	...	...	...	...
Chicken-pox	3	1	...	2	...	...	...	...	...	...
Broncho-Pneumonia ...	54	19	11	7	1	2	3	8	3	7

TABLE IV.

INFANT MORTALITY DURING THE YEAR 1913.

NETT DEATHS FROM STATED CAUSES AT VARIOUS AGES UNDER ONE YEAR OF AGE.

Cause of Death.	Under 1 week	1-2 weeks.	2-3 weeks	3-4 weeks.	Total under 4 weeks.	4 weeks and under 3 months.	3 months and under 6 months.	6 months and under 9 months	9 months and under 12 months.	Total Deaths under 1 year
All causes { Certified	129	30	29	19	207	114	114	74	57	566
All causes { Uncertified ...	...	...	...	...	...	...	...	...	...	...
Small-pox	...	...	...	...	...	...	...	...	...	...
Chicken-pox	...	...	...	...	...	...	...	1	...	1
Measles	...	...	...	...	...	...	...	2	...	2
Scarlet Fever	...	...	...	...	...	...	...	...	1	1
Whooping Cough	...	...	...	...	...	...	3	3	3	9
Diphtheria and Croup ...	...	...	...	...	...	...	...	...	1	1
Erysipelas	...	...	...	...	...	1	...	...	...	1
Tuberculous Meningitis ...	...	...	...	...	...	...	1	1	...	2
Abdominal Tuberculosis ...	...	...	1	...	1	3	7	2	2	15
Other Tuberculous Diseases	...	...	...	...	...	...	1	...	2	3
Meningitis (not Tuberculous)	...	...	...	...	...	1	2	4	2	9
Convulsions	7	5	2	2	16	8	7	6	5	42
Laryngitis	...	...	...	...	...	...	...	...	...	...
Bronchitis	...	1	1	2	4	14	14	5	3	40
Pneumonia (all forms) ...	1	...	...	1	2	4	11	7	14	38
Diarrhœa	...	2	2	1	5	13	14	14	7	53
Enteritis	...	...	2	1	3	23	28	12	6	72
Gastritis	1	1	1	...	3	3	5	4	2	17
Syphilis	...	1	...	1	2	9	2	2	1	16
Rickets	...	...	...	...	...	...	1	...	1	2
Suffocation, overlying ...	...	...	...	2	2	...	1	...	...	3
Injury at birth	3	...	...	...	3	...	...	...	...	3
Atelectasis	7	1	...	...	8	...	...	...	...	8
Congenital Malformations ...	6	...	2	1	9	2	1	1	...	13
Premature Birth	77	12	9	4	102	13	...	...	...	115
Atrophy, Debility and Marasmus	21	6	7	4	38	17	11	6	1	73
Other Causes	6	1	2	...	9	3	5	4	6	27
Totals	129	30	29	19	207	114	114	74	57	566

Nett Births in the year { legitimate, 4,703. / illegitimate, 197.

Nett Deaths in the year of { legitimate infants, 506. / illegitimate infants, 60.

DEATHS FROM SPECIFIED CAUSES AT ALL AGES, AND AT EIGHT GROUPS OF AGES, IN CARDIFF, DURING THE YEAR 1913.

Cause of Death.	0 to 1		1 to 2		2 to 5		5 to 15		15 to 25		25 to 45		45 to 65		65 and upwards		All Ages			Rate per 1,000 persons living.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	M.	F.	Total	
I.—General Diseases.																				
Enteric Fever	...	...	...	...	...	...	...	...	1	...	3	1	...	1	...	...	4	2	6	0·03
Malaria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	0·00
Measles	...	1	1	5	2	1	...	1	...	...	...	...	...	...	...	...	8	3	11	0·05
Scarlet Fever	...	...	...	1	2	4	5	1	3	...	...	...	...	...	...	...	7	10	17	0·09
Whooping Cough	...	5	4	3	2	...	3	...	...	...	...	...	...	...	...	...	8	9	17	0·09
Diphtheria and Membranous Croup	...	1	...	4	...	10	7	6	11	2	...	...	...	...	...	...	23	18	41	0·21
Influenza	...	2	1	...	...	1	...	...	...	...	...	3	...	3	2	3	1	12	4	16	0·08
Erysipelas	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	2	0·01
Chicken-pox	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	1	3	0·01
Mumps	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	0·00
Pyæmia, Septicæmia	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1	2	2	4	0·02
Pulmonary Tuberculosis (not acute)	...	1	1	2	...	1	...	4	9	20	26	51	49	42	16	5	1	126	102	228	1·22
Acute Phthisis	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2	...	2	0·01
Acute Miliary Tuberculosis	...	...	...	...	...	...	...	1	...	1	...	1	1	...	...	...	...	1	3	4	0·02
Tuberculous Meningitis	...	1	1	1	2	5	1	3	4	2	1	1	3	...	...	...	...	13	12	25	0·13
Tuberculosis of Peritoneum and Intestines	...	7	8	3	1	1	2	...	2	1	4	1	...	...	...	...	...	17	13	30	0·16
Tuberculosis of Spinal Column	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	0·00
Tuberculosis of Joints	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	4	0·02
Other forms of Tuberculosis	...	...	1	...	2	...	2	1	1	...	2	...	...	...	...	...	...	5	4	9	0·04
Rickets, Softening of Bones	...	1	1	1	4	...	...	...	...	...	...	...	...	...	...	...	...	2	5	7	0·03
Syphilis	...	6	10	...	...	1	...	1	...	1	...	1	1	...	...	...	...	8	13	21	0·11
Gonorrhœal Ophthalmia	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	0·00
Cancer	...	...	...	...	...	...	...	...	...	...	14	16	42	37	19	30	75	83	158	0·84
Other Tumours	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	1	2	3	0·01
Rheumatic Fever	...	...	...	...	...	...	2	4	3	4	1	1	...	...	...	2	6	11	17	0·09
Chronic Rheumatism, Osteo-arthritis	...	...	...	...	...	...	...	...	...	...	...	...	1	5	6	6	7	13	0·06
Diabetes	...	...	...	...	1	...	...	...	...	...	1	2	1	3	5	7	2	13	9	22	0·11
Leucocythæmia, Lymphadenoma	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	...	...	2	1	3	0·01
Anæmia, Chlorosis	...	...	...	...	...	...	...	...	2	1	...	1	4	6	...	...	...	5	8	13	0·06
Diabetes Insipidus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	0·00
Purpura	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	0·00
Alcoholism (acute or chronic)	...	...	...	...	...	...	...	...	...	...	2	...	1	1	...	1	3	2	5	0·02
II.—Diseases of the Nervous System and of the Organs of Special Sense :—																				
Encephalitis	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	3	3	0·01
Meningitis, other forms or undefined	...	4	5	2	1	4	2	1	4	...	...	...	1	1	...	...	12	13	25	0·13
Locomotor Ataxy	...	...	...	...	...	...	...	...	...	1	...	...	6	...	1	...	7	1	8	0·04
Other Diseases of the Spinal Cord	...	...	...	...	...	...	...	...	...	...	1	1	8	...	2	...	14	1	15	0·07
Cerebral Hæmorrhage, Apoplexy	...	...	...	...	...	...	...	...	...	...	3	1	18	19	29	22	50	42	92	0·49
Softening of Brain	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	2	3	0·01
Hemiplegia	...	...	...	...	...	...	...	...	...	...	1	1	3	4	8	4	12	9	21	0·11
Paraplegia	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	3	1	4	0·02
Other forms of Paralysis	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	2	2	0·01
General Paralysis of the Insane	...	...	...	...	...	...	...	...	...	...	5	2	9	1	1	...	15	3	18	0·09
Other Forms of Mental Alienation	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	0·01
Epilepsy	...	...	...	...	...	...	...	...	...	...	1	2	7	...	...	...	8	3	11	0·05
Infantile Convulsions (under 5 years)	...	28	14	...	3	...	...	...	...	...	...	...	...	...	...	...	28	17	45	0·24
Chorea	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	2	2	0·01
Hysteria, Neuralgia, Sciatica, Neuritis	...	...	...	...	...	...	...	...	...	...	...	1	1	4	1	...	...	6	6	0·03
Other Diseases of the Nervous System	...	...	...	...	2	...	1	...	...	...	3	1	1	2	1	1	5	7	12	0·06
Mastoid Disease	...	...	1	1	...	1	...	1	1	...	1	...	...	...	...	...	4	2	6	0·03
III.—Diseases of the Circulatory System.																				
Endocarditis, Myocarditis	...	...	...	...	...	...	...	...	1	1	3	1	3	...	1	...	2	8	10	0·05
Valvular Disease	...	...	...	...	...	...	3	2	3	2	7	9	18	14	13	19	44	46	90	0·48
Fatty Degeneration of the Heart	...	...	...	...	...	...	...	...	...	...	...	...	3	4	...	...	3	4	7	0·03
Other Organic Disease of the Heart	...	2	1	...	...	2	...	2	2	...	5	7	27	27	20	18	58	55	113	0·60
Angina Pectoris	...	...	...	...	...	...	...	...	...	...	1	2	2	...	1	2	4	4	8	0·04
Aneurysm	...	...	...	...	...	...	...	...	...	...	2	...	8	2	1	...	11	2	13	0·06
Arterial Sclerosis	...	...	...	...	...	...	...	...	...	...	...	...	6	...	5	...	11	2	13	0·06
Cerebral Embolism and Thrombosis	...	...	...	...	...	...	...	...	...	...	2	2	3	3	5	5	10	15	25	0·07
Other Embolism and Thrombosis	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	2	0·01
Diseases of the Veins (Varices, Hæmorrhoids, Phlebitis, &c.)	...	...	...	...	...	...	...	...	...	...	...	...	1	...	4	1	4	5	0·02
Hæmorrhage; other Diseases of the Circulatory System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	0·00
IV.—Diseases of the Respiratory System.																				
Laryngismus Stridulus	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	0·00
Laryngitis	...	...	...	...	...	1	1	1	1	...	...	...	1	...	...	...	3	2	5	0·02
Other Diseases of Larynx	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	0·00
Bronchitis	...	26	14	2	5	2	1	...	1	5	3	22	16	53	45	111	84	195	1·04
Broncho Pneumonia	...	10	9	6	5	4	3	1	...	2	...	1	2	5	3	2	1	31	23	54	0·29
Lobar Pneumonia	...	...	1	...	...	1	...	...	1	...	1	4	1	9	...	1	1	15	5	20	0·10
Pneumonia (type not stated)	...	10	...	3	1	2	1	2	2	...	3	14	11	5	4	4	1	47	30	77	0·41
Pleurisy, Empyema	...	...	...	...	...	...	...	...	...	...	2	1	3	2	1	2	6	5	11	0·05
Pulmonary Congestion, Pulmonary Apoplexy	...	...	...	...	...	...	...	...	...	...	...	1	2	1	5	2	8	10	0·05
Asthma	...	...	...	...	...	...	...	...	...	...	1	...	3	1	2	...	6	1	7	0·03
Pulmonary Emphysema	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	2	...	2	0·01
Fibroid Disease of Lung	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	2	1	2	0·01
Other Diseases of the Respiratory System	...	...	...	...	...	...	...	...	...	...	1	...	2	1	...	...	3	1	4	0·02
V.—Diseases of the Digestive System.																				
Diseases of the Mouth and Annexa, Thrush	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	0·00
Diseases of Pharynx, Tonsilitis	...	...	...	...	...	1	1	1	...	...	...	...	...	1	...	...	2	3	5	0·02
Perforating Ulcer of Stomach	...	...	...	...	...	...	...	...	...	...	...	...	1	2	1	1	5	4	9	0·04
Inflammation of Stomach	...	7	7	...	...	1	1	...	...	...	1	2	3	5	1	1	13	16	29	0·15
Other Diseases of the Stomach	...	2	3	...	...	...	...	...	...	...	...	...	1	...	...	2	3	5	8	0·04
Diarrhœa and Enteritis	...	61	64	13	12	1	1	...	...	...	1	...	3	1	2	5	83	83	166	0·89
Appendicitis	...	...	...	...	...	...	...	1	1	6	2	2	1	1	...	1	11	4	15	0·07
Hernia	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	1	2	4	6	0·03
Intestinal Obstruction	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1	2	5	3	8	0·04
Other Diseases of the Intestines	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	1	2	0·01
Cirrhosis of Liver	...	...	...	...	...	...	...	...	...	...	4	...	8	6	5	1	17	7	24	0·12
Other Diseases of the Liver	...	...	...	...	...	...	1	1	...	...	...	...	1	...	3	1	1	2	6	0·04
Peritonitis (cause unstated)	...	...	...	...	1	...	1	2	1	...	...	...	1	...	1	...	4	4	8	0·04
Other Diseases of the Digestive System	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...	...	2	3	5	0·02
VI.—Non-Venereal Diseases of the Genito-Urinary System and Annexa.																				
Acute Nephritis	...	...	...	...	...	1	...	...	...	1	1	3	3	2	3	3	1	10	8	18	0·09
Bright's Disease	...	1	...	...	...	...	...	...	2	2	4	3	14	9	7	3	28	17	45	0·24
Other Diseases of the Kidney and Annexa	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	2	...	2	0·02
Calculi of the Urinary Passages	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	2	...	4	...	4	0·02
Diseases of the Bladder	...	1	...	...	...	...	...	...	...	...	1	...	4	...	3	2	9	2	11	0·06
Diseases of the Urethra, Urinary Abscess, &c.	...	...	...	...	...	...	...	...	...	...	3	...	2	...	...	...	5	...	5	0·02
Diseases of the Prostate	...	...	...	...	...	...	...	...	...	...	1	...	1	...	6	...	8	...	8	0·04
Uterine Tumour	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	0·00
Other Diseases of the Uterus	...	...	...	...	...	...	...	...	...	...	...	...	3	...	1	...	...	4	4	0·02
Ovarian Cyst, Tumour (Non-Cancerous)	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	2	2	0·01
Other Diseases of the Female Genital Organs	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	0·00
VII.—The Puerperal State.																				
Abscess of Breast	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	0·00
Accidents of Pregnancy, Abortion, &c.	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1	0·00
Puerperal Hæmorrhage	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	3	3	0·01
Other Accidents of Childbirth	...	...	...	...	...	...	...	...	1	...	4	...	...	...	...	...	...	5	5	0·02
Puerperal Fever	...	...	...	...	...	...	...	...	1	...	1	...	4	...	...	...	...	2	2	0·01
Puerperal Albuminuria and Convulsions	...	...	...	...	...	...	...	...	1	...	4	...	...	...	...	...	...	5	5	0·02
Puerperal Insanity	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	0·00
VIII.—Diseases of the Skin and of the Cellular Tissue.																				
Senile Gangrene	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	3	3	0·01
Gangrene, other types	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	0·00
Carbuncle	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	0·00
Phlegmon, Acute Abscess	...	...	5	...	...	...	1	...	...	...	1	1	...	...	...	1	2	7	9	0·04
Ulcer, Bedsore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	2	0·01
Pemphigus	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	0·00
IX.—Diseases of the Bones and of the Organs of Locomotion.																				
Diseases of the Bones	...	...	...	...	1	...	1	1	...	1	...	...	...	1	...	...	4	1	5	0·02
Other Diseases of Locomotor System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
X.—Malformations.																				
Congenital Hydrocephalus	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	0·00
Congenital Malformation of Heart	...	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	5	0·02
Other Congenital Malformations	...	5	3	...	...	...	...	...	...	...	...	...	...	...	...	...	5	3	8	0·04
XI.—Diseases of Early Infancy.																				
Premature Birth	...	62	54	...	...	...	...	...	...	...	...	...	...	...	...	...	62	54	116	0·62
Infantile Debility, Icterus, and Sclerema	...	39	21	...	...	...	...	...	...	...	...	...	...	...	...	...	39	21	60	0·32
Infantile Atrophy, Debility, and Marasmus	...	6	5	...	...	...	...	...	...	...	...	...	...	...	...	...	6	5	11	0·06
Want of Breast Milk	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	0·00
Atelectasis	...	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	4	4	8	0·04
Injuries at Birth	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	3	0·01
XII.—Old Age.																				
Senile Dementia	...	...	...	...	...	...	...	...	...	...	...	...	1	2	7	5	8	7	15	0·07
Senile Decay	...	...	...	...	...	...	...	...	...	...	...	...	...	1	48	73	48	74	122	0·65
XIII.—Affections Produced by External Causes.																				
Suicide	...	...	...	...	...	...	...	...	3	...	4	...	4	1	...	...	11	1	12	0·06
Acute Poisonings	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	1	0·00
Violence	...	3	1	3	1	7	5	11	3	12	3	18	4	30	4	13	9	97	30	127	0·68
XIV.—Ill-defined Causes.																				
Syncope (aged 1 and under 70)	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	3	...	3	0·01
Heart Failure (aged 1 and under 70)	...	...	...	...	...	...	1	...	...	...	1	...	4	2	1	...	7	2	9	0·04
Atrophy, Debility, Marasmus (aged 1 and under 70)	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	0·00
Teething	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	3	0·01
All Causes	...	310	256	53	49	55	38	48	56	72	62	201	167	365	236	310	289	1414	1153	2567	13·7